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WASHINGTON'S
SEVENTY YEARS of PROGRESS.

BY
EZRA MEEKER

SEVENTY YEARS OF PROGRESS

IN

WASHINGTON

BY EZRA MEEKER

AUTHOR OF "WASHINGTON TERRITORY WEST OF THE CASCADE MOUNTAINS," "HOP CULTURE IN THE UNITED STATES," "PIONEER REMINISCENCES OF PUGET SOUND," "THE TRAGEDY OF LESCHI," "THE OX TEAM," "EIGHTY-FIVE YEARS OF A BUSY LIFE," "PIONEER'S STORIES FOR CHILDREN."

SEATTLE, WASHINGTON
1921

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To "Know Thyself" is half the battle of life. To know your State is a long stride toward useful citizenship.

Ira Landrith

Seattle, Washington
December 29, 1921

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MY acknowledgement is due to Maurice Fitz Gerald for the three fine stories of Indian Wars of Washington, of which he was a part as scout with General O. O. Howard and for other material and in securing and compiling data for this work; to Clarence B. Bagley for his advice and information supplied; to the management and employees of the Seattle Public Library in their effort to lighten my personal labors in searching out historical facts and compiling them ready for my use; to several state officers—all to whom I applied—for valuable data; to Geo. N. Salisbury of the U. S. weather Bureau department for the complete tables of temperature and rainfall as far back as observations had been taken and, finally to hundreds of friends—past the thousand mark — who by their advance orders encouraged the incurring of so heavy an expense putting on the work at a time of such high cost of printing.

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"Washington Territory West of the Cascades" Addendum

GREETINGS!

ON THIS, my ninety-first birthday and publication date of this volume, with thankfulness in my heart for the many blessings vouchsafed to me by Divine Providence, with good health and cheerfulness of mind, I extend this greeting to friends and strangers alike; to the few Comrades of "Ye olden time" left in this mundane sphere and to the generations that have followed in the succession of years.

That world conditions are different than when I first saw the light of day 91 years ago, or when Washington was created, (now so near 70 years ago), or even 50 years, within the memory of many now living in our midst is only evidence of the inscrutable ways of Providence measuring the cycles of time for the betterment of the race.

In acknowledging that conditions are better; that the average comforts of life are greater; that the march of the nations toward a higher civilization has advanced; that altruism is more prevalent; that happenings of the races has progressed and improving, is only an acknowledgement of divine power. That there may come a time when crime in the world will cease; when war between nations shall be no more; when suffering will have disappeared, all ardently wish even to the point of a hope.

Realizing we have a duty to perform under God's overruling providence; that each has in his power to better world conditions; that we are instruments in the hands of God to carry forward His plan, let us all accept the responsibility with cheerfulness and joy and strive for the upbuilding and happiness of the race.

EZRA MEEKER

CHAPTER I.

REMINISCENT

"Oh, that mine enemy should write a book."

Writing a Book at 90—What to Name It—Crossed the Plains Nearly 70 Years Ago—In Washington Ever Since—Decision Arrived at—"Washington's 70 Years of Progress"—Cabin on the Majestic Columbia—Food Prices Sky High—Whisky Alone Cheap—Cry of Cougar Heard at Night—Catching Saw Logs Brought Down by Freshet—Made Good at it—Location not Satisfactory—Decided on Moving to Sound.

Well, here I am in my ninety-first year, writing a book. An enemy has no terrors for me, however much I may regret ill-feeling on the part of anyone, as, in the natural course of events, I shall soon be called to another sphere of action; but in this sunshine of ninety years of life I owe no man a grudge, and from outward appearance, no one holds aught against me.

"And what are you going to name your book?" I am asked. A gifted authoress once told me that she had never selected a title until the book was written, and then fitted the title to the subject matter in the book. I couldn't do that if I would, and what's more, I wouldn't if I could. I must have a definite mark to shoot at; some objective point to concentrate upon; some push behind to urge me on. The authoress is undoubtedly right from her point of view, but that will not serve me. So, I have selected a title in advance of the writing.

Things were very different when I was born, ninety years ago, from what they are in the world today. I have had in mind to write of affairs in my life of ninety years. Bearing in mind that ten years of my boyhood

days did not impress me like later years, and that to a considerable extent my intention is to bear personal testimony where possible toward the correct relation of events, I could not conclude to name the whole period of my life as a part of the title. Then to what extent shall I curtail the time, as I had determined to write of one theme, "Progress"; and what territory should I cover? Shall I undertake to cover the world's progress? Or, only the United States? Neither of these suited my fancy, in fact, each loomed up as such a big job that my resolution quailed. Anyway, that was not what I had had in mind.

Nearly seventy years ago I had come out on the Plains with an ox-team, accompanied by a precious young wife and the finest baby boy in the world (our opinion, you know) bound for the Oregon country. I was young then, not yet twenty-two, full of ambition; and by the way, have some left yet. My wife was not yet twenty, but full of confidence in the future; the baby boy but eight weeks old when we crossed the Missouri River, but better natured than his father had been reported to be when a "brat," as one woman (I won't call her lady) once called me to my mother's face. Well, as I said, we thought ours was the finest, cutest baby in all the world. Why, we had not been on the road long till my wife would put a blanket on the ground, right on the dirty ground, mind you, and dump the baby on it and leave him there while she got the camp supper; it was not long till he would roll around and actually suck his thumb. We thought it was the funniest thing in all the world. Well, that's the way with all young parents, I guess.

The crossing of the Missouri River and crossing the Plains to the Oregon country was a great event in my life, following closely on the greater event of a happy marriage before I had reached the twenty-first year of my life. Why not affix the date of my writing to these two great events? That didn't yet seem satisfactory; it was too personal; besides, it was not what

had been running in my mind when the thought of writing presented itself.

We had reached the Oregon country in safety, somewhat reduced in strength, and for myself, the loss of twenty pounds in weight; but our ambition remained with us.

We had come to the Oregon country to get a farm such as Uncle Sam then gave to settlers, one hundred and sixty acres each, to man and wife, separate ownership, and the first thing to look after was to find the land.

If the reader will take the trouble to look at the frontispiece, he will there see a cabin pictured (No. 7). That is an exact picture of the cabin we built on the spot where Kalama town now stands, on the right bank of the Columbia River, about forty miles distant from Portland, Oregon.

In a few weeks after we had got under shelter in our cabin, another child was born. Congress named it Washington Territory, and lo and behold, we were not living in Oregon, but in the new Territory! Another great event! Here we were, with our fortunes cast with the destiny of a new State, although at the time but two persons, with a fraction over (whites, I mean, for there were fifteen thousand Indians), to a township of land of thirty-six sections—23,040 acres—virtually an uninhabitated country, of a verity (surety) at the beginning. We loved the very thought of that child, remained with it in its long territorial minority, rejoiced when it was clothed with State Manhood thirty-six years later, and are yet here when nearly two million people occupy the space where less than four thousand could be counted at the beginning. Here, now, was another great event in one's life. Not a single individual, save possibly one other adult, who was here at that time, is left but myself; all gone to their long home; the generation of that day has passed and a majority of a second called, and lo and behold, I am

left! Why, I thought, that's the date; take the three great events, averaging the dates and rounding the numbers for convenience, and call it seventy and we have the key to the title, *"Washington's Seventy Years of Progress."*

In the fac-simile copy of my first book, reproduced and bound under this cover, entitled *"Washington Territory West of the Cascade Mountains,"* the reader will find the boundaries defined of that portion of the State lying West of the Mountains named in the title; also in the same book a description and boundary of the eastern part and remainder of the State, from the pen of Philip Ritz. A history of this book and interesting events connected with its publication will be related later.

For the present, we must go back to the cabin "where rolls the Oregon," a majestic River more than a mile wide, and a channel deep enough for what we thought at the time, great ships to navigate, drawing eighteen feet of water—a mighty River indeed! We discovered that at intervals the current ceased to flow down stream and sometimes would go the other way. We had always been taught that water wouldn't run up hill, but here it did, or at least appeared to, for the current would run up-river way. Some mysterious power, seventy miles distant at the mouth of the river, met the down-river current; the rush of the ocean tides, piled up the contending currents of water till the mastery rested with the sea and the flow of the river water checked, and as I have said, turned up-river way.

The fire on the cabin hearth burned bright and cheerful, albeit things around about us didn't seem so bright. A deep snow had fallen in December. The price of cattle feed went up sky-high; in fact, one might say, couldn't be bought for love or money. We had to give up our last and favorite cow to save the last yoke of oxen; flour sold at fifty dollars a barrel,

potatoes, three dollars a bushel—everything high except whisky, and that we didn't want. I had never drunk the stuff but once and that was when I was a boy eight years old. Some brute or fool had discovered myself and two other boys playing in the basement of a mill at Lockland, Ohio, and gave us some whisky to drink. We didn't know what it was, but soon began to feel funny, then ugly and fell to fighting near a great big pile of bran, got down in the bran and got our eyes and ears full of it. Father found me in this fix, took me up to the top story of the mill and gave me a good trouncing, as he called it—beating, as I thought of it, and sent me home. I don't remember that he had ever struck me before and I am sure he never did afterwards. My! but didn't my blood boil with indignation; I hadn't intended doing anything wrong—didn't know any better, and then to be beaten for it—well, it sobered me off and I ran home as fast as my legs could carry me, to my mother. The tender stroke of my mother's hands to my torn heart; the tears that dropped from her eyes on my hands, made such a lasting impression upon my mind that I never forgot it. But I will write about this whisky business and of the progress made by the adoption of that righteous act—Prohibition, later.

But let us get back to the cabin. It was the first home we ever owned. We had not "kept house," in Indiana and had been a year on the road, simply sojourned in Iowa for the winter; hence it is small wonder that we clung to the cabin in a restful mood with the hope that we might find it a permanent home.

The cabin stood about a hundred yards back from the river, just above the river bottom, and on the rather steep slope of a solid, rocky bank, with a door and projecting roof on the river view end, and with three or four rather steep steps to reach the floor level. The side walls of the cabin were barely high enough to enable us to stand up straight inside when the roof

was on; the clapboard roof protected us from the rain and served as ceiling above our heads, while the ridge-poles served in the place of a closet where extra articles, when not in use, might be stored. At the back end, a low cobble-stone chimney served to keep the inner cabin clear of smoke from the cheerful fire that not only warmed the cabin, but likewise served as the kitchen range, without cover, upon which to cook the simple food, and to provide light as well.

We had graded into the hill a little for the rear end of the cabin, so that, with the rise of the hillside next to the chimney, one could look down to the fire below without craning his neck.

On several occasion, of nights, we heard noises, not like the howl of a wolf, but more like the scream of a frightened woman, which we thought, and I think so yet,—was a cougar prowling in the brush and timber near by. The little wife became uneasy, fearing the "thing" might come down the chimney, but I quieted her fears by claiming there was no more danger of that than that Santa Claus as pictured, would come that way. Afterwards, I learned that these animals were dangerous when pressed by hunger and that a child had been killed by one. Anyway, I would prefer to have a good stout cabin wall between me and one of them than to meet it in open combat, as did one of our pioneers, a Mr. Stocking, who, be it said, killed his antagonist in a hand to hand fight.

The furniture, all home-made, consisted of a table made of some drift lumber, picked up in the Columbia River, stools instead of chairs, a folding bed with wooden hinges near the floor, to close up against the wall during the day. Moss between the logs, closely packed (caulked will express it), served to keep gusts of wind out and confine the heat of the fire to keep the cabin warm and comfortable, albeit the roof supplied abundance of ventilation.

The site upon which this cabin stood is but a little over a stone's throw from where the Northern Pacific Railroad depot at Kalama now stands. The cabin has long since disappeared, but I can yet identify the spot upon which it stood.

We had taken this squatter claim from sheer necessity to secure a place where I could provide a roof over our heads and shelter from the storms then prevailing (January 1853), not because the location suited us; it was far below the ideals pictured in our imagination when preparing to leave Indiana in search of a Western home. We could not go further at the time. The trip across the plains with the ox and cow team had exhausted our scant accumulations, and so with cheerful submission to necessity, the claim was taken, the cabin built and clearing land begun.

Soon after, a dire calamity overtook the pioneers of the up-river region. The snow melted rapidly, accompanied by warm rains; the floods came; the Columbia River became a vast field of driftwood, parts of houses, hay stacks, lumber, sawlogs, in a word, something of all kinds of property imaginable.

We, (when I say we now I mean myself, brother and an Indiana neighbor boy) instantly sailed out in our small boat, catching saw logs and towing them into a place of safety, working even by moonlight as well as all day—no eight or five hours a day there. When the flood subsided we tackled giant trees that stood near the water's edge and handlogged for a month to supplement our drift logs, when lo and behold, we finished with Eight Hundred Dollars in our pockets, and I had money enough to go to Puget Sound.

Now, I have been purposely personal in this narrative, because I could in no other way illustrate what pioneer life meant at that particular time. Many other pioneers had a like experience and could have told a similar story, but nearly all have joined the majority in the unknown mysterious life.

But just now, let us take a further peep into pioneer life in the cabin. We had left the great Mississippi Valley with its wonderful fertile prairies, its vast extent then sparsely inhabited, to go to the Oregon country, yet a land of mystery—unexplored, uninhabited, one might almost say. The same might be said of Iowa. I remember one bitter cold day of the winter of 1851-52 of traveling thirty-five miles between cabins, in the western part of Iowa,—a long stretch of rich, unoccupied land that held no attractions for me, as I wanted to get out to where ships could "go down into the sea," not to be a sailor or to follow the sea, but to be out. accessible to the great wide world. We did not for an instant give up the resolution that we were going to the Oregon country to be farmers, which resolution by the way, we steadily adhered to, as the sequel will show; but here now, as we looked out of the cabin window, what did we see? A stony hillside skirting the valley; a narrow valley covered with forest and brush, subject to overflow in front; great forests of giant timber, and in the nearby surroundings of the cabin, utterly precluding the thought of neighboring farms in the future; no neighbors nearer than three miles; no road; nothing, in a word, that we had pictured in our own minds to find. I had practiced deceit with my wife in assuming a cheerfulness I did not feel; I came to know that she on her part, was doing the same thing; but this could not go on always, so one day we made a confession, and whether manly or womanly or not, turned loose our disappointment in tears and soon felt the better for it.

A week after the "confession," accompanied by my brother Oliver, we struck the trail for Puget Sound, with the sky as our roof, Mother earth as our bed, sweet sleep as our comforter and a keen appetite to add pleasure to the trip. Pleasure did you say? I can imagine some readers inquiringly exclaim. Yes, real genuine pleasure. I could sleep as soundly as if on a bed of down; enjoy a rest denied the sluggards or lag-

EZRA MEEKER AT 23

BROTHER OLIVER AT 25

gards searching for soft jobs. Nature was putting on her best new dress for it was spring time; the flowers shone bright; the silver tips on the evergreen trees brighter, like the home Christmas tree; the snow-capped mountains in the distance and no less fascinating snow-covered mountain ranges in sight. The deep toned hoot of the grouse answering the call of his mate, the thrumming of the pheasant like to the roll of distant thunder, all lent irresistible charm to the scene to draw one's mind from the fatigue of the trail. Then the everlasting, never-ending green of the forests; the subdued, variegated verdure of the carpet beneath; the moss, the ferns, the budding wild fruit; the fragrance of the primeval forests, combined to enhance the pleasures of the scene.

I have never regretted that trip to the sound, the result of which the reader, if possessed of patience to follow the thread of the *"Progress of Washington,"* will know, as all subsequent years of my life have been identified with the territory and state, from the beginning.

CHAPTER II.

State and County Statistics

First Governor of Territory Appointed—Arrived November 25th, 1853—Heavy Responsibilities on His Shoulders—Less Than 4,000 Eligible for Citizenship—Election Ordered—Legislature Convened February, 1854—Creation of Counties Begun —Continued to Present Time—39 Now—Pend Orielle Last Created—Table of Statistics.

The appointment of a Governor and full complement of territorial officers quickly followed the passage of the act creating the territory, but the organization was delayed for nearly a year awaiting the arrival of the Governor. The appointee, Isaac I. Stevens, had been loaded down with responsibilities. He was charged with the duty to reconnoiter (survey, we pioneers called it) the northern zone to determine the feasibility of constructing a railroad from the Great Lakes to the new territory and did not arrive at the capital until November 25th, 1853. He was also charged with the responsibility of making treaties with the Indians. His first duty, that of making the survey, resulted in a grand work; a monument to his energy and ability to perform the duty assigned to him.

A census had been taken developing the fact of there being less than four thousand people entitled to citizenship within the borders of the territory (less than two to the township).

An election was immediately ordered and on the twenty-seventh of February, 1854, a legislature convened and the territory became a live political unit in fact as well as in name.

A potent, and we may almost say a determining factor, that resulted in the division of the Oregon country, into two territories was the great difficulty of reaching the capital. It seems now, bordering on the ridiculous to create a territorial government where there were scarcely citizens enough to fill all the offices. Doubtless there existed a dominating political reason causing the central government to lend a willing ear to the proposition of creating a new territory in the fact there were "More political pegs than holes" and such a move would supply many new "holes." After all, it transpired the move proved to be a wise one.

While the division lessened the difficulties and delays of reaching the capital, there still remained the hazard oftentimes of long detention. At the close of the first legislature one of the brightest members lost his life almost in sight of Seattle by the swamping of the canoe in which he was traveling on his return from Olympia. In fact, at that time, there was no other way he could travel from the capital to his home in Seattle. No roads were opened parallel with the Sound; no ferries established on the two dangerous rivers to be crossed; no passenger boats of any kind on the Sound and no alternative existed other than to accept the hazard of a winter trip in a canoe. It is different now as the reader will see by turning to other chapters of this volume.

The creation of new counties by the first legislature began at once and has been continued intermittently until the State is divided into thirty-nine; the last, Pend Oreille, March 1, 1911.

By scanning the table following, the reader can at a glance, see the name, date of organization, area and population in decades from date of organization as reported by the U. S. census.

Counties	Date Organized	Area	Pop. 1860	Pop. 1870	Pop. 1880	Pop. 1890	Pop. 1900	Pop. 1910	Pop. 1920
State				23,955	75,116	357,232	518,103	1,141,990	1,356,621
Adams	Nov. 28, 1883	1,912				2,098	4,840	10,920	9,623
Asotin	Oct. 27, 1883	606				580	3,666	5,831	6,559
Benton	Mar. 8, 1905	1,071						7,937	10,903
Chelan	Mar. 13, 1899	2,900						3,931	15,104	5,802
Clallam	Apr. 25, 1854	1,726	149	408	638	2,771	5,603	6,755	11,268
Clarke	Aug. 18, 1845	634	2,637	3,081	5,490	11,709	13,479	26,115	32,805
Columbia	Nov. 11, 1875	858			7,103	6,709	7,128	7,042	6,093
Cowlitz	Apr. 1, 1854	1,153	405	730	2,062	5,917	7,877	12,561	11,791
Douglas	Nov. 28, 1883	1,787				3,161	4,926	9,227	9,392
Ferry	Feb. 21, 1899	2,220					4,562	4,800	5,143
Franklin	Nov. 28, 1883	1,206				696	486	5,153	5,877
Garfield	Nov. 29, 1881	694				3,897	3,918	4,199	3,875
Grant	Feb. 24, 1909	2,720						8,698	7,771
Grays Harbor	Apr. 15, 1854	1,927	283	401	921	9,249	15,124	35,590	44,572
Island	Mar. 7, 1891	208	292	626	1,081	1,787	1,870	4,704	5,489
Jefferson	Dec. 22, 1852	1,747	523	1,268	1,712	8,368	5,712	8,337	6,557
King	Dec. 21, 1852	2,111	301	2,120	6,910	63,989	110,053	284,638	389,240
Kitsap	Jan. 16, 1857	371	540	806	1,738	4,624	6,767	17,647	33,162
Kittitas	Nov. 24, 1880	2,329				8,777	9,704	18,561	17,580
Klickitat	Dec. 20, 1859	1,825	230	329	4,055	5,167	6,407	10,180	9,268
Lewis	Dec. 21, 1845	2,369	336	888	2,600	11,499	15,157	32,127	36,740
Lincoln	Nov. 24, 1883	2,302				9,312	11,969	17,539	15,141
Mason	Mar. 18, 1854	930	162	289	639	2,826	3,810	5,156	4,919
Okanogan	Jan. 2, 1888	5,221				1,467	4,689	12,887	17,094
Pacific		895	406	738	1,645	4,358	5,983	12,532	14,891
Pend Orielle	Mar. 1, 1911	1,404							6,363
Pierce	Dec. 22, 1852	1,701	1,114	1,409	3,319	50,940	55,515	120,812	144,127
San Juan	Oct. 8, 1873	178		554	948	2,072	2,928	3,603	3,605
Skagit	Nov. 28, 1883	1,774				8,747	14,272	29,241	33,388
Skamania	Mar. 9, 1854	1,685	171	133	809	774	1,688	2,887	2,375
Snohomish	Jan. 14, 1861	2,064		599	1,387	8,514	23,950	59,209	67,690
Spokane	Oct. 30, 1879	1,756	674	{ 734 }	4,262	37,487	67,542	139,404	141,289
Stevens	Jan. 20, 1863	3,866		{ }	1,245	4,341	10,543	25,297	21,605
Thurston	Jan. 12, 1852	709	1,495	2,246	3,270	9,675	9,927	17,581	22,367
Wahkiakum	Apr. 25, 1854	267	41	270	1,598	2,526	2,819	3,285	3,372
Walla Walla	Apr. 25, 1854	1,265	1,297	5,300	8,716	12,234	18,680	31,931	27,539
Whatcom	Mar. 6, 1857	2,082	352	534	3,137	18,591	24,916	49,511	50,585
Whitman	Nov. 29, 1871	2,108			7,014	19,109	25,360	33,285	31,323
Yakima	Jan. 21, 1865	5,059		432	2,811	4,429	13,462	41,709	63,710

CHAPTER III.

Railroad Development

Beginning of Railroading in the U. S.—Almost Contemporaneous With Birth of Author—Opposition Encountered at First—The Days of the Stage Coach—Plans Advanced for Building of Railroad to Coast—The N. P. Most Important for Development—Opposition from Both California and Oregon—In June, 1870, First Work Begun—Meeting With Jay Cooke in New York—Road Financed—Development in Washington—Slow at First—Serious Obstacles Encountered—First R. R. in State—Columbia River and Puget Sound Road Completed—Great Development in Later Years—Network of Roads Now in State—Electric Roads—Great Possibilities in Future.

In as important a subject as that of railroads to be considered in this chapter, it is permissible to go back of the arbitrary date of seventy years to get a perfect retrospective view from the beginning, a little over ninety years, and note its growth from infancy.

As stated elsewhere in this volume, the beginning of railroads in the United States dates about the year 1827 when the idea first seized upon the minds of our forbears to transport freight on cars to run on a continuous track. This idea soon expanded to carrying passengers as well and the foundation was laid for the great development that followed. I may almost say I was born contemporaneously with the birth of railroads (1827-1830) in the United States and have the unique experience vouchsafed to but few of having witnessed the whole transformation of world affairs and particularly of the United States because of it. As already noted, for two decades and even longer a very pronounced opposition to the building of railroads was manifest. As a boy and as a lad in my "teens" I

often heard excited controversy on the subject, but like the opposition to the introduction of labor saving machines it finally disappeared. Of course the first track and cars were very crude affairs and fit subjects for condemnation for other reasons than for destroying the wagoner's business and closing the roadside inns all along the line. Quite recently (1915) I drove along the line of the old National road (known also as the Cumberland road) from Washington city to the near vicinity of St. Louis and drank in the scenes of the old stage stations; and could all but imagine hearing the horn to note the arrival; see the hurry and scurry to unhitch and hitch the four or six-in-hand; hear the fading sound of the grating wheels as they turned the last corner. The remains of these stations are there yet where the roaring fire crackled and sent forth good cheer, too often to be supplemented by the contents of the decanter; where statesmen, on their way to and from the Capital, tarried, slept and ate; where the news of the day posted within served instead of newspapers of today; where stories of frontier life were exchanged, stories of heroism and suffering, of altruism, of merriment to gladden the pioneer heart. Small wonder the pioneers of that day were loath to give up the joys of the stage coach for the jolting railway carriage of early experience.

The stage coach disappeared from the Cumberland road only to appear again in greater glory under more trying and dangerous surroundings on the Plains of the then West as a forerunner of the railroad soon to follow —opening the way for the irrepressible unrelenting movement West. The introduction of the stage coach into Washington was an adventure following the ox teams of the pioneers who came braving an element of danger; both paving the way for the greater financial hazard of the railroad.

The Northern Pacific Railroad though not the first in point of time built within the borders of the territory, easily became the most important in the develop-

ment of the embryo state. The earliest mention of a projected transcontinental railroad of which there is any record was by a Dr. Samuel Bancroft Barlow in 1834, advocating the building of a road over the Northern Pacific route. He must have been a man of vision as he used the identical arguments later put forward immediately preceding the building, and assembled facts that would seem incredible in view of the developments in railroad building prior to that date. Then came Dr. Parker, the Missionary, predicting in 1835 the building of a railroad over the same route as he followed the route of the Oregon trail in company with Marcus Whitman through the South Pass to the rendezvous at Ft. Bridger.

Then followed Asa Whitney in 1846, again using the same arguments for a railroad from Lake Michigan to Puget Sound; shortest route; lightest snow; continuous soil suitable for settlement; tapping the Oriental trade, etc., familiar talk heard later. Whitney spent a fortune and seven years of effort to get a land grant, failed and died in poverty.

At a railroad convention held in St. Louis (1849), participated in by Stephen A. Douglas and other prominent men in which Whitney's map was used describing the route from Chicago to Council Bluff, through the South Pass, over the Cascade Mountains to Fort Nisqually on Puget Sound; but the vehement Benton's attention was arrested and we then first heard a southern route mentioned.

One more adventurer, a Dr. Carter, in 1848 or 1849 rushed to the front to secure a charter for a railroad from Lake Michigan by way of the South Pass to San Francisco with a branch to the mouth of the Columbia River. His career was short lived and nothing came of his effort.

It is well to note that all these projects of a transcontinental line looked to the South Pass (the Oregon trail route over the Rocky Mountains) known then and

ever since admitted to be the most feasible route across this formidable barrier. Then why did not the Union Pacific, the first continental road, build through this pass, the reader will ask. I met General Dodge, chief engineer of the road—who pointed the way—at Council Bluffs, Iowa, in 1911, a few years before his death, and asked him this same question. General Dodge informed me he did recommend building the road through the South Pass but was over-ruled by the directorate because of the discovery of coal south of the pass and the line was located to reach the coal fields, though admittedly over a less favorable through route.

When I last saw General Dodge he was a very old man, yet stood erect and with his mental faculties unimpaired. He talked freely of this episode and seemed to regret that he had been overruled, believing that a branch line to the coal fields would have been a better solution of this important matter. The General came out in company with many others to join the group in the moving picture scene on the streets of Council Bluffs, with my Oregon trail ox team outfit, just arrived from the Pacific Coast, in the background. The film is deposited in the Washington State historical room at Tacoma with the wagon, also the oxen mounted.

An eminent engineer, Edwin F. Johnson, through a long investigation ending in 1853 advocated a route from Lake Michigan via Fort Colville to Bellingham. Johnson made the fatal mistake of laying his information before Jeff Davis, then Secretary of War, who immediately formed a combination of Southern Leaders all agreed that no railroad should be built to the Pacific, north of the 35th parallel. The discovery of gold in California brought speedy developments overshadowing the Oregon country in population and wealth, giving statehood and votes in Congress and presented a barrier for a Northern line that could not be overcome for many long years. So long as California could prevent the building of a Northern line direct to the East,

just so long could she hold the trade of the North country, and held Oregon and Washington firmly in her grip until the Northern Pacific line was built to the Oregon railroad connection; then Oregon took the place of California as far as Washington was concerned, throttled direct trade to the East as far as possible and secured all of the trade from the Eastern half of Washington, appropriated the profits of the whole transcontinental line by the unconscionable rates charged on the short line through the Columbia river gap and held the Northern Pacific in its grip and at the mercy of the Oregon interests.

Encouraged by their success the management came out boldly against the direct line to Puget Sound over the Cascade Mountains but reckoned without their hosts as the sequel shows.

Next in order came the so-called survey by Isaac I. Stevens, in 1853—reconnaisance—under Government authority, demonstrating the feasibility of the Northern route and raising high hopes of a speedy construction of the road. Finally in 1864 the congress granted a charter and a land grant of twenty alternate sections on each side of the line in States and forty in territories to the Northern Pacific Company along the line substantially as outlined by Governor Stevens upon which the road was finally built. Congress had previously granted lands and guarantee of bonds to the Union and Central Pacific for a line from the Missouri River to San Francisco but refused to go further than to grant lands to the Northern Pacific. Political and local jealousy combined contributed to this result. The slave power as before mentioned had opposed any measure in congress looking toward giving aid to a Northern line; then came the specious plea that one transcontinental line would suffice to accommodate the trade for many decades. So long as the Southern interests could defeat or delay the building of a Northern line, so long the San Francisco interests could control the Northern trade. And so it went from decade to decade, dis-

appointment following disappointment until forty years elapsed from the time the first company was formed to build over the Northern Pacific route before the final completion of the road during the year 1887, when the last spike was driven on the Cascade division direct to Puget Sound over the Cascade mountains.

In June of 1870, at a point named "Thomson's Junction" in the State of Minnesota, a few miles northwest of Duluth (then but a village on the shores of Lake Superior) construction work was begun. In common parlance the line began nowhere and ended nowhere. In blissful ignorance of what was happening in the far East a syndicate of 83 pioneers were gathering their resources to meet the printing bill for the book "*Washington Territory West of the Cascade Mountains*". On my part about twice a month for the summer I would gather my manuscript and data together and "Strike out" for Olympia, a walk of thirty-five miles. I can truly say they were pleasant walks—walks of abstraction, hence one might almost say without fatigue. As before written I had entered upon the work with reluctance: I did not believe myself competent to do justice to the subject; with scant school days I knew the difficulty that would beset me. To my surprise as the work progressed, the syndicates committee began to commend the effort in such extravagant language that caused me to almost distrust their candor. As the "Little book", as we were wont to call it, is reproduced and bound within the cover of this volume, each reader must judge for himself or herself as to its merits or demerits. For six years after congress granted the charter promoters struggled to obtain funds to warrant undertaking construction work and ignominiously failed.

Finally Jay Cooke appeared on the field, or rather the discouraged promoters sought him out to assemble the funds necessary to construct the line, estimated at a hundred million dollars. It was at this juncture I met Mr. Cooke in New York as related elsewhere. After a short season in New England I hastened to

Philadelphia and entered into the campaign of publicity, not only to advertise the railroad securities but all the territory adjacent to the route including our own territory of Washington and Puget Sound in particular. Mr. Cooke, in taking over all my books and paying a liberal price for them, jocularly remarked they could not tolerate competition in advertising the Northwest and upon my arrival in Philadelphia assigned me a desk in the second story above the bank saying, in lighter vein, he had no room for volunteers; in other words I would be placed on the pay-roll of their advertising department. After my experience in New York and New England and now in Philadelphia, the world seemed bigger than I had thought of it in my pioneering experience in a region of scant population, or perhaps it might be more accurate to say of my own littleness, but Mr. Cooke's demeanor reassured me to think of myself as a cog in the wheel of the great machinery of life.

The six printing presses were running (the same, I was told with pride, that turned off the advertising matter for the United States bonds during the war of the rebellion) that had saved the Government from bankruptcy and had won the war, printing advertising matter of the proposed railroad and the country through which it ran. Each day, and sometimes twice a day, a truck carried off to the Post Office a load of this, a ton weight some days or even more; eleven hundred newspapers were carrying advertisements of the great project, many with editorials supplied from the room above the bank. I was bid to "make myself at home" and as the spirit moved me to write correspondence as from Olympia on Puget Sound or in form of editorials for papers. Mr. Cooke frequently would send for me to meet intending investors in his office, sometimes to be looked upon as a curiosity, sometimes as a martyr having been buried "out there" away from civilization for twenty years, yet always with genuine, civil treatment by both ladies and gentlemen, for both thronged

the office at times. At the receiving windows of the bank two grey headed tellers were counting in the money in payment for bonds—tellers I was told who had grown grey in Mr. Cooke's employ—whom I often met in the capacious dining room in the basement of the bank where all employees were invited guests for a lunch (a good dinner I called it) large enough to seat sixty or more persons. With three full tables, all the employees of the bank, a jolly merry crowd, turned loose as boisterous as ever a lot of school children at play. The call at Mr. Cooke's office referred to gave me an accurate insight into the policy of the company as Mr. Cooke spoke with great candor to inquiring visitors. The work he said was begun on the Columbia River that the terminus might not be established at the Sound until the line was completed to the north boundary of Washington to secure the land grants of forty sections to the mile of completed road which he believed would sell for more than enough to pay for the construction. Branch lines under different names were to run in to tidewater at vantage points while the main line was finished to the Canadian boundary. Guests of high and low estate thronged to "Ogoutz": generals of the army, cabinet officers, senators, ambassadors, financiers, none too high not to accept the bounteous hospitality offered, while there seemed to be none too low in social scale not to receive as cordial invitations from the great democratic financier.

Mr. Cooke had built a palatial residence—castle would more accurately express it—a fifty-room palace at a cost of a million dollars a few miles out from the business center of Philadelphia. He named it "Ogoutz Place" after a noted Wyandotte chief. As many as eighty guests had been seated in the great dining room at one time. On the evening which I spent at the residence there were at least thirty besides the family, upon the occasion of Truman Evarts' visit to Philadelphia. Mr. Cooke thought it would be fitting to have the two western stories told to his invited guests and

so invited me to meet Mr. Evarts at the home. It was truly a remarkable story told by Mr. Evarts of his experience in the region now a part of the Yellowstone Park. Lost thirty-seven days in the wilderness, without food, fire or shelter, he wandered, living on thistle roots until his mind wandered and was finally rescued near death's door. The expedition from which Mr. Evarts was lost confirmed the reports of this wonder of wonders made by individual adventurers that heretofore had been received with incredulity until confirmed by organized exploration parties.

Seventy years ago there was not a single mile of railroad in the state of Washington, nor for many years thereafter. This is not to be wondered at, there being only a small number of white people then domiciled within the confines of that extensive territory. It also must be borne in mind that the natural obstacles to railroad construction were many and great throughout all this Northwestern region. Rugged mountain ranges to be crossed, mighty rivers to be spanned; immense primeval forests to be penetrated and vast stretches of sandy waterless plains to be graded and ballasted. These were enough to appall the most daring financier and the most adventurous speculator; and were it not for the wonderful natural resources and advantages possessed by the territory to more than offset the impediments mentioned, it would undoubtedly have taken a much longer time than it has to cover the state with a network of steam and electric railroads as we find it today.

The first operating steam railway in the state was the "Baker" road from Wallula on the Columbia River to Walla Walla, commonly known as the "rawhide" road. It was in operation, part of the thirty odd miles between these points, in 1871. Ten years previous to that time the Oregon Steam Navigation Company had a six-mile steam tramway from the upper to the lower cascades on the Columbia, in connection with their river steamers. But it can hardly be called a railroad.

The purpose of the Baker road was to carry the surplus wheat and flour of the productive Walla Walla Valley to the bank of the Columbia where it was transferred to river steamers and thence taken to Portland.

On the return, merchandise of all kinds was brought back for supplying the rapidly increasing population of that thriving town and surrounding country.

This road lessened the transportation charge from Walla Walla to Portland $5.00 per ton.

In May, 1870, ground was broken at Kalama on the Columbia River by the Northern Pacific R. R. Co., and in 1871, 25 miles built Northwards. On December 16, 1873, the last spike was driven on Commencement Bay and a little later the first through train from Columbia River to the Sound arrived at tidewater.

Not long afterwards it was extended to Seattle, thence Northwards to the Canadian boundary line.

It can readily be seen that railroad development in our state was at the beginning of very slow growth, owing principally to the difficulty of getting capital interested in such enterprises. J. Cooke and Co.'s failure materially retarded the opening up and development of the entire Northwest from Minnesota to the Pacific.

But time seems to cure everything. In 1887 the N. P. was completed to the Sound.

From that time on, as the great advantages of the State became better advertised and its superb location in relation to expanding oriental commerce became recognized by the big business men of the country, the great railrad magnates vied with one another in pushing construction of their roads, so as to partake in the benefits to be derived from the immense traffic destined to enter the unequalled harbors on the sea coast and within the land-locked Sound.

Now five transcontinental railroad lines reach Washington with mileage within the borders of the state and traffic service as follows:

	Total Mileage	No. of Persons Carried One Mile	Tons of Freight Carried One Mile
Chicago, Milwaukee & St. Paul	1,089.21	36,047,246	618,954,319
Great Northern	1,586.70	100,127,943	753,761,721
Northern Pacific	2,978.02	135,766,979	1,508,790,421
Oregon and Washington R. R. & Nav. Co.	1,443.34	1,064,165	3,498,513

Canadian Pacific—Train from boundary to Seattle over Northern Pacific or Great Northern track; Spokane, International.

There are, besides the transcontinental lines entering the state, twenty-five independent local steam rail lines, aggregating 1268.81 miles, carrying annually 7,597,140 passengers and 356,713,480 tons of freight.

The steam railways have now active competitors for business in twenty electrical railways within the state with an aggregate mileage of 1093.42 and carrying 156,567,509 passengers one mile per annum.

The foregoing figures for steam and electrical railway development in the state of Washington are certainly remarkable considering the fact that all this has been accomplished in the short space of 40 odd years.

Greater progress than this no state in the Union has had.

The ox gave way to the railway, the horse-car to the electric and gasoline motor and steam power. Now we are in the midst of a mighty struggle between steam on one side and gasoline and electricity on the other. It is a battle royal of the giants. Whether steam as a power will lose and drop out of the contest, is problematical; no man can tell; many, though, believe such will be the result. The recent electric operation of seven hundred miles of a transcontinental line—400 of it in our State—by the Milwaukee, where heavy trains pass over the mountain range daily, hauled by the electric locomotive, motor, as we usually speak of them,

is a feat not thought possible a few years ago; but here now it is an accomplished fact and has passed out of the domain of experiment.

As though this demonstration was not sufficient, the "tug of war" between the electric and steam locomotives recently held near this City, where, after the result of the contest hung in the balance for a short period, the electric monster towed the steam giant off the field with the latter's wheels spinning on a sanded track furiously resisting.

We are now cutting most of our lumber, grinding most of our grain, propelling all our urban and interurban cars, many of our steamships and turning the wheels of manufactories by this mysterious power.

What wonder next in the march of events?

CHAPTER IV.

Transportation and Travel

In Pioneer Days Traveling Difficult—Trip to Sound—Magnificent Scenery—First Roads—Military Road Through Naches Pass—Pioneers Take a Hand in Work—Immigrants on Plains—Difficulties Encountered—Improvements of Later Years—State Highways Now Numerous—Large Appropriation Last Biennium—The Automobile an Important Factor—History of Its Development—Now Indispensable to Business—Important Factor in War—National Highways Necessary—Measure Before Congress—Automobiles in State.

In the early days of pioneer life if we wanted to go anywhere we either walked, paddled a canoe or rowed a boat. If we wanted to move anything we either packed it on our backs or by horses (sometimes on an ox), often by a sled but rarely by wagon.

I write of a time prior to general road construction. I had a little of this experience myself in a walk from the Columbia River to Puget Sound with a forty-pound pack on my back and can truly say I enjoyed life; slept sound and had a keen appetite; wonders upon wonders unfolding before me every day and when we first caught sight of the four snow capped mountain peaks at one view, we forgot ever having been tired or hungry, or for that matter, everything else than the grand scenery. Then when we came on the great network of bays, channels and islands of Puget Sound and views of the mountain ranges to the East and to the West, it seemed like an enchanted land of solitude held for us to enjoy and possess. We literally had to "paddle our own canoe," or row our own boat, if we traveled on the waters of the Sound which we did for thirty days.

The pioneers soon turned their attention to what they called roads; such as would be called trails now, but were wide enough to let wagons through by winding about to avoid trees, big or little, leaving the surface much as nature had formed it, stumps, roots and all. "Dreadful," some of my readers may exclaim. Yes, but it beat packing on the back of man or beast; besides, the pioneers didn't stop to think about it: their errand was to "Get there," and they did, as the sequel shows and came through with stalwart frames, healthy children, contented cheerful minds and, with many, a clear conscience of having done a duty to God and to mankind.

The first through road from the Columbia River to the Sound began at Monticello, near the mouth of the Cowlitz River and ended at Tumwater, at the extreme Southern Point of Puget Sound, a distance of seventy miles. This on paper was a military road but I am not aware of any expenditure of the Government ever being made to either survey or improve it. Monticello was more a name than a town, being the farm house and outbuildings of Uncle Darb Huntington, as we all called him, with a blacksmith shop, store, two or three families and a stable. Here the passengers were dumped off the little steamers from Portland and other Columbia River points, and here, in the earliest days, the hapless traveler either struck the trail (afterwards supplanted by the road), or would tuck himself with others into a canoe, like sardines in a box, where an all-day journey up the Cowlitz River was his fate, unmoved and immovable except as an integral part of the frail craft that carried him to "Hard Bread's" tavern for the night. We have taken a peep into Hard Bread's hostelry in another chapter, and of the trail and canoe passage, but that was before the days of the road now under notice. At first, travelers to the Sound ascended the Cowlitz to the landing further up the river than where the mud-wagon road left the Cowlitz, and from the landing were sent on their way by saddle-

train or over the makeshift of a road cut by the Simmons-Bush party in 1845, over which they dragged their effects on sleds to the head of the Sound, or to be specific, to the mouth of the Deschutes River, afterwards and now known as Tumwater, two miles south of Olympia.

I have no history of the construction of the later road all the way up the right bank of the Cowlitz to the mouth of the Toutle River (Hard Bread's), and thence deflecting northerly to the Chehalis, where the old and new routes were joined, and soon emerged into the gravelly prairies where there were natural road beds everywhere. The facts are, this road, like "Topsy," just "growed," and so, gradually became a highway one could scarcely say when the trail ceased to be simply a trail and the road actually could be called a road. First, only saddle-trains could pass. On the back of a stiff jointed, hard trotting, slow walking, contrary mule, I was initiated into the secret depths of the mud holes of this trail. And such mud holes! It became a standing joke after the road was opened that a team would stall with an empty wagon going down hill, and I came very near having just such an experience once, within what is now the municipal limits of the thriving city of Chehalis.

After the saddle train, came the mud wagons in which passengers were conveyed (often invited to walk over bad places, or possibly preferred to walk), over either the roughest corduroy or deepest mud, the one bruising the muscles, the other straining the nerves in the anticipation of being dumped into the bottomless pit of mud.

Now (1921) there is a hard surfaced road most of the way (and soon will be all the way), over which automobiles "Speed" thirty miles an hour between the points named and extending Northward to the British Columbia line and Southward to Vancouver, Washington, and on through Oregon to the California line, and thence through California to the Mexican border.

Congress, early in the year 1853, appropriated $20,000.00 to build a military road through the Naches Pass from Fort Steilacoom on Puget Sound to Walla Walla, (Wallulu as we know it now), on the left bank of the Columbia River, a distance roughly estimated at 225 miles. This fund, only a "Drop in the bucket" of what would be required to accomplish such an object, did not become available to expend that year, was placed under the control of Capt. George B. McClellan who, the next year dissipated a portion of it in reputed exploration, finally turned over the remainder to be expended by E. J. Allen, a pioneer of 1852, who had been at the head of the pioneer working force, opening the road through the pass the previous year, as will be related later in this chapter. The pioneers would not wait; the immigration of 1853 was on the Plains, wending their way to the Oregon country; all would go down the Columbia or over the mountain south of that river into the Southern section of the old Oregon territory unless instant action was taken to open a road over the mountain direct to Puget Sound; so the sturdy settlers resolutely took the seemingly impossible task in hand, sent two parties into the field and demonstrated that a way could be opened and secured the passage through of nearly a hundred wagons and three hundred people during the year 1853. At times the people and their cattle were on the verge of starvation. This "Way" could hardly be called a road. It is a tragic story but too long to tell in detail for lack of space. How they whip-sawed lumber from drift-wood and built a boat to cross the mighty river Columbia a few miles below its junction with the Snake; how they toiled in the sage plains parallel to the Yakima Valley, then without a white settler in it; how they struggled up the canyon of the Naches, sometimes cutting their way through tangled brush and timber; sometimes traveling over rounded boulders imbedded in sand bars, or in the river, ascending the mountain range to be compelled to let their wagons down the Western slope with ropes of raw-hide from cattle killed on the spot, all reads like

fiction, which it is not, but is a true story as I happen to know by experience. Now tourists may drive their automobiles most of the way and it is to be hoped, soon may all the way.

It was a hazardous undertaking this and one may well say rash when it is known there were less than four thousand people all told in the new territory; but the pioneers did not shirk the task and sent forty of the eight hundred workers of the territory to clear a way that the immigrants might follow.

One incident must suffice to relate the difficulties confronting the immigrants as told by the writer long years ago when memory served him better than now and witnesses then more numerous, most of whom have since passed on to the beyond.

"About twenty miles north of the great mountain of the Cascade range is a picturesque, small scope of open country known as Summit Prairie, in the Naches Pass, some seventy miles easterly from Tacoma. In this prairie, a camp of immigrants was to be seen. Go back they could not; either they must go ahead or starve in the mountains. A short way out from the camp a steep mountain declivity lay squarely across their track. As one of the ladies of the party said, when she first saw it, 'Why Lawsee Massee, we have come to the jumping off place at last.' This lady felt like many others of the party, that they had come to the end of the world (to them), and the exclamation was not for the stage effect, but one of fervent prayer for deliverance.

"Stout hearts in the party were not to be deterred from making the effort to go ahead. Go around this hill they could not; go down it with logs trailed to the wagons, as they had done before, they could not, as the hill was so steep the logs would go end over end and be a danger instead of a help. The rope they had was run down the hill and found to be too short to reach the

bottom. One of the leaders of the party, James Biles, (I knew him well), turned to his men and said, 'Kill a steer,' and they killed a steer, cut his hide into strips and spliced it to the rope. It was found yet too short to reach the bottom. The order went out, 'Kill two more steers.' And two more steers were killed, their hides cut into strips and spliced to the rope which then reached to the bottom of the hill; and by the aid of that rope and strips of the hides of those three steers, twenty-nine wagons were lowered down the mountain side to the bottom of the steep hill."

Now, a hundred and twenty-five miles of the way is covered by a road easily traversed by automobiles, forty of which is hard-surfaced, leaving less than forty in its primitive condition.

By a recent official report we learn there are 2,976 miles of State highways in the State, of which 1,945 are improved; that is, either smooth gravelled or hard-surfaced with brick or cement: this does not take into account the network of local county roads to be found in each of the thirty-nine counties of the State exclusively under control of County authority, of a larger aggregate mileage.

The report shows that during the bi-ennium just closed an expenditure of $11,725,330 in the aggregate was made and all on the policy of "Pay as you go." The voters of the state have so far set their faces like flint against incurring state indebtedness and are able to say, "Here we are without indebtedness and have a billion dollars assets in our roads and fourteen state institution buildings to show on the credit side of the ledger."

The total appropriation for state roads for the bi-ennium of 1921-22 is $12,490,000 all from state revenue; the policy is continued, "Pay as you go and keep the state out of debt."

The Automobile

Comes now a new substance, Gasoline, to contend with the giants of power for a place "in the Sun;" to plow our soil, harvest our crops, enter our service in a multiplicity of ways, besides contending with steam and electricity in movement of freight and passengers. When and how this contest will end, no man can foretell. Whether the supply of the basic substance from which gasoline is made will eventually fail, or if it does, a new source of force will take its place, we can only conjecture. We know as long as the seasons follow in succession and the rains fall; the rivers continue to flow, the supply of electric power will never diminish or fail us, and so we feel assured that the automobile and the motor truck, the trackless car, has come to stay, and to believe that the electric automobile and motor cars will in due time take possession of the field.

In all the vast changes that have taken place, perhaps there is no single instrumentality that has played a more important part in the daily affairs of men than the "Horseless wagon", commonly known as the automobile.

For hundreds of years, progressive men have racked their brains in efforts to devise a vehicle that could be driven on an ordinary highway by some motive power other than the horse. But although at times a near approach was made to successful construction of such a vehicle, yet there was always encountered some problem that could not be solved. So the untiring labors of those ambitious inventors came to naught.

It was reserved for an ingenious Frenchman named M. Leon Serpollet, by application of the instantaneous generator in 1894, to overcome all serious difficulties, and by so doing he has been an instrument in the hands of Providence to revolutionize the transportation of the world. And by the way, it needed revolutioniz-

ing. How vividly an old timer can remember the horrible conditions of what were called roads in pioneer days in this and other states; the mud holes, rocks and stumps only partially removed, the occasional impassable place that had to be corduroyed, and the steep hills that were almost impassable with even an empty wagon. All these things confronted the man who had taken up land for a homestead and upon which he sought to raise and market sufficient produce to keep himself and family in food and clothing. Without roads upon which he could take to market his surplus grain, vegetables and dairy products, he was compelled to live upon his own production.

For years this condition had to be endured because the building of roads in such a State as Washington, with its immense primeval forests, its many ranges of high and rugged mountains, its mighty rivers and its vast stretches of sand and sagebrush, rendered such a task beyond the ability of a new and struggling commonwealth to undertake. But the advent of the trackless car changed all this. Its advantages as a vehicular means of local travel soon became apparent; and later its great sphere of usefulness in the speedy and economical transportation of freight, caused such a widespread and insistent demand for good roads, that public sentiment became thoroughly aroused, so that the counties separately and the State as a whole, appropriated large sums for the construction of first class roads in every portion of the State. And still the good work goes on and will continue to go on until every nook and corner in the State will have a hard-surfaced road. Yes, the fever has even taken hold of Congress and large sums will soon become available for the building of several national highways traversing the land from North to South and from East to West. Who can doubt that this unity of purpose has been brought about through the universal interest of the American people in the improvement of automobile transportation.

When one views the continuous stream of auto travel at this date passing through the streets of our cities, both for transporting freight and personal locomotion, he would naturally infer that every kind of traveling is being done by automobile. While surely this would be a misconception, yet it is increasing so rapidly that it may become an absolute verity in the not distant future. Even now in long distance freight hauls, where the highways are suitable, auto freight trucks are entering into competition with the railroads. And the time may come when the trackless car may not only supplement but largely take the place of our present railroads.

The automobile has certainly made business more convenient and life more easy and enjoyable than in ye olden time.

But whether the "Buzz-wagon" is more conductive to the health and vigor of humanity than the old method of locomotion is very questionable. Its constant use impairs to a greater or less extent, the use of the limbs and tends to corpulency. However, the people like it and it is here to stay; and there is nothing to be gained by finding fault with it. For all must admit that it is an indispensable adjunct to high-pressure civilization.

While all kinds of motor power have been used for propelling the automobile, gasoline has up to this time given the best satisfaction and is almost universally used for that purpose. However, there seems to be a widespread belief that the time will come when that mysterious agency, electricity, will become sufficiently amenable to human control to replace gasoline, steam, and everything of that nature now being used.

Nor has the automobile been only of surpassing importance in improving the methods of transacting business in all branches of industrial activity; on the farm, in the logging camp, with the big manufacturing establishment, aiding the speedy delivery of merchandise from the wholesale to the retail merchant and

from the merchant to his customers at their homes; bringing the suburban resident from his remote home to his employment in the city without the loss of valuable time; taking the physician to the bedside of the stricken patient in a few moments, where a slight delay might often prove fatal; all these of prime importance in our civil life. But it has also been found of vital importance where gigantic armies are contending for the mastery in the field of battle. In the great World War, we can all remember how a number of the fastest cars were always in readiness at Staff Headquarters for conveying the Military Commanders from one strategical point to another in the quickest possible time, when failure to get there in the nick of time might mean irreparable disaster.

At the most crucial period of that great contest, when the victorious hosts of the German Imperial Army, flushed with recent successes over English, French and Belgian forces, were driving headlong towards Paris, their main objective, and when at the first battle of the Marne the destiny of the allied cause lay trembling in the balance, the automobile it was that saved the day and turned a seeming defeat into a glorious victory. In order to check the advance of the Germans at that fateful crisis, it was necessary to have large reinforcements hurriedly brought up in support of the left wing of the Allied Army which was bearing the brunt of the enemy attack, and if compelled to give way, the road to Paris would be open for the Huns. There were 100,000 troops in Paris but apparently no way of getting them to the front in time. At this critical juncture, Rene Viviani, Commander of the City, commandeered every auto in the metropolis, both passenger cars and trucks, loaded every fighting man in the city upon them and rushed them to the front.

In a few hours, this formidable contingent appeared upon the scene of activities, inspired the hard-pressed allied soldiers with new courage, at the same time send-

ing dismay into the ranks of the enemy. In an irresistible advance, the gallant French Army drove the enemy back across the Marne; threatened his right wing, causing a general retreat. The day was saved. A Great Battle was won! And the automobile achieved an imperishable record in the annals of war.

But that was in Europe. Right here in our country the time may come when the trackless car will play an important part in saving the day. Let no man delude himself with the idea that the day of wars has passed. Nations and individuals have engaged in deadly combat since the dawn of history and we feel no assurance that they will not grapple for mastery till time shall be no more.

Whenever a man's honor is assailed, his person assaulted or his property confiscated, he feels like fighting; and if there is red blood in his veins he *will* fight. So it is with nations. No country worth the name will stand to be bullied or imposed upon by another country. It is contrary to human nature to tamely submit to insult. Leagues of Nations, or International Conferences may at times be able to settle some differences, or negotiate some compromise, but as sure as the sun shines in the heavens there will come a time when racial hates, commercial rivalries, or sectarian animosities will become so strong, and popular feeling so inflamed that nothing less than the arbitrament of war can settle the disputes. Now the only way to minimize this inevitable danger is to be thoroughly prepared for all eventualities. This country has experienced the lack of preparedness on more than one important occasion and a recurrence of such a humiliating condition should never be allowed to occur again. Being prepared is a safe insurance against danger and disaster.

One of the most important things in the line of preparedness, for a country like this, of such vast extent, is to have every means of transportation in first class condition, so that men and material could be

moved expeditiously to any point on either of our coast lines in numbers or quantities as may be needed. In order to accomplish that result, there must be more, many more good roads, so good that thousands upon thousands of motor cars heavily laden could travel over them at a high rate of speed. The few lines of railroads now traversing the continent would be totally inadequate in such an emergency. Therefore, great national highways should be constructed at the earliest possible moment, traversing the country from the Atlantic to the Pacific. Then we could feel as if we were able to meet any emergency, even though our army should remain numerically small.

Nor is it alone as a matter of defense that such highways are now becoming of vital importance. Before we realize it, our present transcontinental railroad systems will be unable to handle the increasing freight and passenger traffic from coast to coast, and it does not seem probable that any new through lines are likely to be built in the near future. Then there must ensue a paralysis of business, which is neither pleasant nor profitable to contemplate.

In 1915, Congressman Humphrey, of Washington, introduced a bill in the House for the purpose of initiating measures leading to the construction of a National Highway from St. Louis, Mo., to Olympia, Wash., said road to follow as nearly as practicable, the route of the old "Oregon Trail"; said highway to be known as "Pioneer Way."

The author of this volume appeared before the House Committee on Military Affairs at that time and made a plea in behalf of the construction of said highway, alleging reasons why favorable action should be taken in the matter by Congress; namely, that from a sentimental point of view, it would be a fitting tribute or monument to the hardy pioneers who traveled across mountains and deserts to penetrate the "Land of Mystery", the Oregon country, which has now become one

of the most desirable and prosperous regions of the United States.

Secondly, it would be a great factor in stimulating industrial activity in the many States through which it would pass, and afford a grand opportunity for the trackless car to demonstrate what it could accomplish in competition with the steam railroads in carrying freight across the continent. Stress was laid upon its absolute necessity as a feature of military preparedness, so that the country might not be caught napping when the emergency arose. He called attention to the wonderful developments that must inevitably come in the transportation business of the country through the universal employment of the trackless car for the movement of freight and the carrying of passengers.

This measure, first introduced by Mr. Humphrey in the House, has been kept alive in the Senate by Senator Jones of Washington, who once succeeded in passing it through the Senate and it is now pending in Congress.

It is proper to add in concluding this chapter that the State of Washington stands very close to the top in the number of automobiles owned according to population.

In 1920 there were in this state 180,214 registered motor cars of all kinds while the population numbered 1,356,621, making a showing of one motor car for every seven and a half inhabitants.

This is certainly a splendid showing and conclusively demonstrates that the "Evergreen State" maintains her old-time preeminence as a wide-awake, up to date and progressive commonwealth.

CHAPTER V.

Trip to New York

Starting Out, 1870—Traveling Through Mud in Dead-Axle Wagon—On the "Briny Deep" in Decrepit Boat—Arrival in New York—Meeting With Horace Greeley—At Farmer's Club —Flowers From Pacific Attract Attention—New England Audiences Amused at Author's Appearance—Sharks in New York—Good Results From Publication of Book.

On the fifth of December, 1870, at 3 o'clock in the morning, dark as pitch, I started for New York City with my precious cargo of 2500 copies of the book referred to and fifty-three varieties of flowers gathered the two preceding days in the gardens and commons of Olympia growing in the open air.

These flowers were gathered at the instance of Mr. H. R. Woodard, of West Olympia, who assisted in gathering and arranging them for their long trip to the Atlantic seaboard. It will be more accurate, however, to say that I assisted him, as Mr. Woodard is entitled to the credit of making the collection; otherwise, I would not have thought of doing it.

The conveyance to the Columbia River consisted of what by courtesy was known as the stage, but in fact a mud wagon, well named indeed, as the sequel will show. It was a "dead axe" wagon, i. e., without springs and would give a fellow an appetite for dinner long before the dinner hour. And such mud! I am shy of telling the exact facts, lest someone would accuse me of exaggerating.

I cannot recall how often we got out to pry up the wheels and lighten the load, nor how far we trudged

along to ease up the load. I exclaim again, such mud! In several instances, the space between the spokes would become clogged and loaded down and compel the driver to stop and clean it out. It's different now. Now one can skip along over almost the whole route on a hard-surfaced road, the Pacific Highway, as smooth and solid as the best paved city street; and travel as far in three hours as the mud wagon could in three days.

Portland was reached in due time and after a few days' delay I boarded the steamer bound for San Francisco, and cast my fortune on the waters of the great Columbia River and the wide sea of the Pacific.

The steamer was small, for a sea-going vessel, old and decrepit, as no other could then be obtained for the route. The terrors of the Columbia River Bar seemed present in the minds of the passengers as we floated on the placid waters of the great river. A recent wreck on the bar fanned the feeling of uneasiness in the minds of the passengers. The stench from bilge water and oil-burning lamps was enough to sicken one without drawing on the imagination. As we entered the approach to the bar, several ran to the rail, in which I led, to feel incensed, and to wonder how anyone could be so heartless as to laugh at the calamity overtaking others.

NOTE: As I write, a vague feeling of uneasiness at the pit of my stomach has seized upon me at the thought of the scene I am trying to describe. I could readily have punched the culprit for laughing, following my inclination; but no sooner did I get relief than I could not restrain an immoderate laugh at the antics, shall I say, of an elderly priest who gripped the rail, dug his toes into the deck of the little ship and uttered a wail so long and so prolonged,—a gurgling groan so ridiculously funny,—that we all laughed until compelled to join in the circus.

The gong sounded for all hands to go below as there were breakers ahead and soon an utter blackness over-

shadowed us followed by a deluge of water down the stairway. An impromptu prayer meeting opened a session. For myself, I had reached my stateroom in utter collapse with a feeling of despair akin to desperation not to care whether the ship went down if I could only be relieved of the agony within me. At intervals on the trip, I could hear the old priest wail from a distant room, to which I would almost invariably respond in chorus with a mental resolution that I never—no, never—would I go to sea again; I would walk a year first.

It's different now. Great steamers a thousand feet long, of 50,000 tonnage, eight stories deep or high—whichever way we may prefer to express it—sink far below the surface of disturbed waters by the waves, with outside fins or inner U-shaped water tanks to automatically counteract the roll of the ship and minimize the motion, make life not merely endurable, but delightful at sea, where one's feet may tread a steadied deck, where stench of the bilge water is banished; the oil lamps driven off by the odorless electric lights; the cramped quarters of the narrow bunks have given way to the comfortable bed—in a word, where all the modern comforts and luxuries of a first-class hotel may be experienced on the modern floating palaces of the present day.

Having, subsequent to the time of the trip described, crossed the Atlantic eight times on the greater and more comfortable ships, I can testify from experience to the progress made in the comfort of travel by sea.

At the date of which I write, the depth of water on the Columbia River Bar precluded the entrance to the Columbia of large steamers. Now, by the work of enterprising citizens of Portland and continued appropriation by the government, the channel has been deepened from the sea to the City of Portland so that palatial steamers of heavy draught can reach that city in safety. I call that *"Progress"*, and again with a big "P" and spelled in big letters.

Arriving in San Francisco exhausted by sea-sickness as before noted, a feeling of depression seized me with an iron grip. My mind harked back to the cabin home in Puyallup; to the little wife; the children that made the cabin so cheery; the pets in the log barn; and even to the song birds of the nearby forests—in a word, I was homesick. I could not brook the idea of backing out and meet the derision of the people where everybody knew everybody; for nearly every man, woman and child knew of the venture, and would know of the result; and besides, there was that dread sea-sickness to confront me at once if I turned back. And so, without delay I took train over the Central and Union Pacific for Omaha and, figuratively speaking, burned my bridges behind me. I think it took eight days to make the trip to New York, most of the way without sleeper or dining car, and part of the way in the smoker with stifling clouds of smoke and vile stench of an unventilated car full of people, two in each seat, and some sitting upon baggage in the aisle. For four days and nights I did not catch a wink of sleep other than that which came over me sitting bolt upright alongside a companion traveler. It's different now in the palace sleeper and appetizing diner. One must have experienced both trips to appreciate the latter, and the measure of PROGRESS which again we will spell with a big "P" and in big letters.

Meeting Horace Greeley

I had read the New York Weekly Tribune for eighteen years while living in the Territory, and felt almost as though I had a personal acquaintance with the noted editor, and immediately sought an interview with him. I did not have to wait long until I climbed the rickety wooden stairs to the second story—and which I think was the top story—of the building, and a wooden building at that, and into the presence of the great man. He was a corpulent man, as I remember him, with a benevolent countenance that seemed almost to say,

"I love you," and at once banished all feelings of bashfulness that might have overtaken a green countryman, literally just out of the woods.

The flowers before mentioned had been well preserved between the leaves of my scrap books and had, to a great extent, retained their natural color. Loving fingers of lady friends had artistically arranged them on sheets of tinted paper. Mr. Greeley examined the collection with great interest.

"I have long known," he said, "that the Pacific Coast possessed a much milder climate than that of the Atlantic; but I did not realize so great a difference." Mr. Greeley continued talking while writing a letter of introduction to Chairman Ely of the Farmer's Club, a remarkable feat, talking on one subject and at the same time writing upon another, the like of which I had never before heard.

At the Farmer's Club

In due time, I presented Mr. Greeley's letter to Chairman Ely, and instantly received an invitation to display my flowers and speak before the Club. The flowers did indeed make a fine display and attracted great attention. Following the advice of Mr. Greeley, I had prepared a history of the flowers and a brief description of Washington, all of which was published in the New York Tribune, and two or three other leading papers of New York, numerous papers in the East, and again in London (at the instance of the Northern Pacific Railroad Company) until the aggregate issues reached over two million copies. It was indeed a great advertisement, and all because of the foresight of one unassuming man, a lover of nature, Mr. Woodard, before mentioned.

Jay Cooke

It was my good fortune to become quite intimately acquainted with Jay Cooke, who had acquired world-

wide fame in the sale of United States bonds during the war of the rebellion. Unquestionably his work hastened the development of our territory. Upon presenting a copy of my book to Mr. Cooke, he at once invited me to accompany him to Hartford, Connecticut, where he was going that same evening to meet invited guests of capitalists to a banquet provided by him. The flowers again came to the front, and attracted great attention. Mr. Cooke took up the whole edition of my book that I had taken East, and commissioned me to tour New England, talk to the people, exhibit my flowers, which I did at Worcester and other cities, and finally to the Horticultural Club in Tremont Temple, Boston.

My appearance in New England cities and before New England audiences certainly did attract wide attention and all sorts of comments. I am not conscious of attempting to put on any "Western Style," in fact, I know I did not, and yet to my surprise people seemed to look upon me as a typical Westerner, and as I afterwards learned, but did not at the time suspect, supplied quiet amusement to many.

I had never been in a large city or within reach of a daily mail. I did not eat with my knife, suck coffee from a saucer with a gurgling sound, drink out of my finger bowl or use my napkin on my olfactory protuberance as some would-be wag pictured Western manners.

I did however get caught (luckily at a hotel) in unthinkingly dropping a lump of butter into my coffee. The titter that went the rounds of the darky waiters dressed in swallow-tail coats amused me—but I didn't do it again. I had acquired the habit, in my camp life before the advent of condensed milk and to this day prefer the butter to that of thin cream or even rich milk.

I had been warned to look out for "Sharks"—confidence men—who would in some way fleece me, even if they didn't rob me. Sure enough, one of them accosted me the first day on the streets of New York. "Would you like an introduction to Jay Cooke, who would certainly take one of your books?" Of all things, that was what I did want, not realizing that I did not need an introduction other than presenting a copy of my book; and this was the way I blundered into the presence of Mr. Cooke that led to a successful result of my trip. The fellow was recognized at the bank on the corner of Wall and Nassau Street and a right royal welcome accorded me as the sequel shows. While awaiting the appearance of Jay Cooke, the brother, Pitt Cooke, embraced an opportunity to warn me against my erstwhile friend and after the interview with Jay Cooke and engagement to go to the Hartford with him, managed to show me out of the bank at a side door, leaving the "friend" sitting in the bank. How long he stayed or what became of him, I never knew.

While the publication of the little book, followed by the blundering method of its promulgation did secure best possible results, yet the culminating factor of great events, the beginning of work on the Northern Pacific Railway finally unloosed the iron bands of isolation and brought many immigrants to the territory.

CHAPTER VI.

CLIMATE

Great Diversities of Climate in State—Western Portion Very Mild and Equable—Inland Empire Has More Variation—Lure of Climate Brought Author to Coast—Disappointment At First—Entire Satisfaction Afterwards—No Mistake Has Been Made—U. S. Weather Bureau Reports To Tell the Tale.

The full and complete tables of temperature and rainfall that follow, prepared by the United States Weather Bureau, specially for this work, covering the whole State and for the whole period of time in which observations have been made, leave but little to be said on climate of the State.

The wide variation in rainfall and temperature registered at the various stations, shows how utterly impossible it is to give a special description other than applicable to restricted localities.

On the eight Coast stations west of the Puget Sound basin, the annual mean precipitation is 96.4, varying from 137 inches at Quiniault to 62.4 at Berth Head with mean temperature at 50.7.

On the western slope of the Cascade range the temperature runs lower. As the altitude increases, precipitation becomes greater than in the Basin in closer proximity to the waters of the Sound and near tide water level.

Even in the Puget Sound division where the would-be wag said it "rained every day in the year and Sundays too," the difference in the annual rainfall varies from a minimum of 20.7 inches at Port Townsend

to 55 at Olympia. At Tacoma, thirty miles north from Olympia the annual precipitation drops to 42.2. Twenty-five miles further north at Seattle, to 34.3. At Bellingham, 80 miles still further north it is but 30.5. For the whole annual precipitation in the Puget Sound basin with observations at fifteen stations, averaging twenty years, the average has been 38.7 inches, temperature 49.9, with variations of not more than three degrees in temperature over the whole district.

Then note the equable annual range of temperature in the basin of Puget Sound: at no point higher monthly mean temperature than 64 (Seattle), or lower than 35 (Clearbrook); the days are never hot or sultry and nights invariably cool—so cool as to require almost the same bed covering in summer as in winter.

The range between the highest and lowest monthly mean temperature at Seattle is 24 degrees; at Tacoma 24; at Olympia 25; at Bellingham 22.

The summers are too cool to produce corn, melons, grapes, peaches, etc., to perfection, although each are produced for home consumption, particularly corn, but for all the hardier vegetables and fruits the climate is ideal, especially for the apple and small fruits.

East of the Cascade Range of mountains, commonly known as Eastern Washington, or the Inland Empire, the range of temperature between winter and summer is greater, although the winters are not severe. The summer temperature is suitable for producing corn, and the more tender vegetables, fruits and melons in great abundance; in fact the peaches and grapes produced in large quantity have acquired a national fame; the apples world-wide, as shown elsewhere in this volume.

As a young man of twenty-two with my young wife, I can truly say that it was the lure of climate that drew us to the Oregon country and brought the final

decision to undertake the memorable trip over the Oregon Trail. To say that we realized what that trip involved would not be ingenuous; but it proved to be an undertaking far more strenuous than we had counted on and I think such was the case with nearly all of the pioneers of that day. With two feet of snow falling within sixty days after arrival, our ideals as to climate vanished. Discouragement and discontent reigned supreme among the newly arrived immigrants. I believe nine-tenths of them would have left the country immediately if they could, but they couldn't get away; in less than a year most all could have gone but by that time they didn't want to go. Those that survived the trip averaged stronger and more stalwart men and women than the throng that crossed the Missouri River. It goes without saying that the greater number that dropped by the wayside were from the weaker physical class, though many strong men and women succumbed. Fully five thousand laid down their lives in the struggle on the Oregon Trail that one year alone (1852) and of course, the average that succeeded were of the class that were strongest; and so, when we speak of the pioneers as a class of stalwarts (which they were), it is well to remember the sad story that eliminated the physically weak.

The sun shone brightly through most of the month of February following (1853), and in early March days we made gardens and our spirits grew apace with the garden stuff and our dreams of the Oregon climate seemed to be realized; then when the later planting of hardy vegetables grew all through the month of November, we were happy in the thought we had made no mistake in choosing the Oregon country for our future home.

The reader must remember this occurred before there was a Washington (territory) and that a part of the experience related, while within the borders of what became Washington, was then a part of and known as Oregon.

I have resided here sixty-eight winters and during that time have seen several pass without enough snow to whiten the ground; then again several with from two to three feet in depth, but never to remain long under the sweep of the Chinook wind from off the warm Japanese stream of the Pacific that here hugs the coast closely; in other words, nature's fickle mood is with us as elsewhere on the globe, leaving us without an ideal climate made to order, but be it said boldly, a beautiful climate and healthy without comparison. The prevailing winds from off the wide expanse of the Pacific Ocean, the oft cleansing of the atmosphere (washing, shall I say?) from frequent rains, the refreshing cool nights that invariably appear as old Sol disappears, the absence of sweltering, enervating heat in summer and lurking malarial germs, all combine to provide surroundings to invigorate the system; then the waters from the springs and rivulets that abound, even bursting out on our smallest islands, often hundreds of feet above the salt sea tide levels, the "Pure the sparkling water" is not only a thing of beauty but of wonderful comfort and life inspiring utility: always "soft" as rainwater and as pure.

I have often and often looked around about me to view these great evergreen forest trees to wonder if they did not breathe and absorb from the atmosphere that which we call impurities. These giants draw their substance from air and moisture and not from Mother Earth. One might almost carry the ash of one of these monsters in his hat; in other words it is certain the evergreen forests that are now "the world's storehouse of timber" depend upon Mother Earth where they stand, only as an abiding place and not for sustenance. I can here only record the fact and leave to scientists to demonstrate how the result is accomplished and the effect upon the impurities of the surrounding atmosphere, if any.

COAST STATIONS

Mean Temperature

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Aberdeen	39	41	44	48	53	56	60	61	58	52	45	41	49.8	22
South Bend	41	43	45	48	53	57	62	61	59	54	47	43	51.1	16
North Head	42	43	45	48	52	55	58	58	57	54	48	44	50.2	27
Quiniault	37	40	43	48	54	58	64	62	58	52	44	40	49.9	7
Tatoosh Island	41	42	44	47	50	52	56	56	54	51	46	44	48.5	25
													Mean 49.9	

STRAIT STATIONS

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Port Angeles	36	38	41	45	50	54	56	57	53	48	42	39	46.7	14
Port Crescent	37	38	41	44	48	52	56	55	52	48	43	40	46.1	15
													Mean 46.4	

SOUTHWEST COUNTIES

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Centralia	38	40	44	49	55	59	64	64	58	52	45	40	50.8	21
Kosmos	36	40	44	49	54	59	65	63	58	51	44	38	50.0	8
La Center	37	40	43	49	54	59	64	64	58	50	44	39	50.0	17
Vancouver	38	41	46	52	58	62	67	66	61	53	45	39	52.2	37
													Mean 50.7	

COAST STATIONS

Precipitation from Rain and Snow, inches and tenths

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Aberdeen	11.9	9.9	7.7	6.1	4.4	3.6	1.0	1.2	4.5	6.7	15.5	13.1	85.6	22
South Bend	12.9	10.9	8.2	6.6	4.8	3.6	1.0	1.8	3.5	6.2	15.2	13.4	88.1	16
North Head	9.1	7.2	6.4	4.4	3.1	2.5	1.2	1.0	3.0	5.1	9.5	9.7	62.4	43
Quiniault	19.8	16.4	12.5	7.8	6.2	5.4	1.6	2.8	7.2	11.9	27.0	18.8	137.4	8
Queets River	15.6	8.8	5.9	6.3	4.1	5.2	2.1	3.9	4.0	7.1	19.5	13.1	95.6	21
Forks	20.5	15.4	13.6	7.2	5.0	3.0	1.4	1.6	4.5	11.1	23.0	14.9	121.2	4
Tatoosh Island	12.2	8.8	7.7	5.6	4.1	3.7	1.6	2.0	5.3	7.0	13.1	13.3	84.4	27
													Sum 674.4	
													Mean 96.4 inches	
													60 to 138 inches	

STRAIT STATIONS

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Port Angeles	5.0	3.1	2.1	1.7	1.2	1.2	0.4	0.6	1.7	2.4	4.8	5.6	29.8	14
Port Crescent	6.4	4.8	3.5	2.3	2.0	1.4	0.5	0.8	2.2	3.3	8.4	6.4	42.0	19

Sum 71.8
Mean 35.9 inches
30 to 42 inches

SOUTHWEST COUNTIES

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Centralia	5.7	4.6	4.0	3.3	2.5	2.2	0.7	1.0	2.4	3.4	8.7	7.4	45.9	20
Kosmos	7.8	5.9	4.4	3.2	3.3	2.5	0.7	1.7	3.1	4.9	9.4	7.4	54.3	8
La Center	6.8	6.5	4.6	3.1	3.2	2.4	0.8	1.2	2.8	4.0	9.3	7.6	52.4	17
Vancouver	5.9	4.1	3.5	2.5	2.4	1.9	0.9	0.7	1.8	2.7	5.7	6.3	38.4	36

Sum 191.0
Mean 47.8 inches
38 to 55 inches

WESTERN SLOPE AND FOOTHILLS

Precipitation, Rain and Snow, inches and tenths.

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Skagit Power	11.6	5.8	5.4	3.0	3.0	2.0	1.4	1.8	5.0	7.6	18.0	8.8	73.6	5
Concrete	10.0	6.4	4.2	3.1	3.1	2.6	1.0	2.1	4.0	6.5	13.1	8.4	64.5	7
Gold Basin	12.0	6.2	5.1	2.9	7.4	4.2	1.2	3.8	4.7	11.5	21.0	11.8	91.8	2
Monte Cristo	15.1	15.4	10.0	8.3	8.8	6.4	1.7	0.7	6.0	6.6	17.9	21.6	118.5	4
Index	12.4	8.8	10.0	3.8	4.6	4.8	1.8	2.3	3.9	7.7	21.1	12.1	93.4	2
Goat Lake	14.1	8.8	6.5	4.2	4.9	2.3	2.4	2.7	6.4	10.6	24.7	10.6	98.2	5
Granite Falls	6.0	5.3	5.3	4.4	4.5	3.7	1.6	2.1	3.9	5.5	8.2	7.1	57.6	13
Snoqualmie Falls	7.8	5.8	4.9	3.9	4.4	2.8	1.1	1.5	3.2	5.0	9.2	7.2	56.8	15
Cedar Lake	14.0	11.7	9.0	6.9	9.1	5.4	2.0	2.9	5.9	10.4	17.7	14.5	109.5	12
Landsburg	6.8	5.4	3.4	3.2	4.1	2.4	0.9	2.0	3.0	4.9	9.7	6.8	52.5	7
Ashford	8.2	7.2	5.7	4.6	5.4	3.9	1.5	1.7	3.7	5.4	11.9	11.0	70.2	13
Stampede	8.9	5.0	5.6	5.0	3.9	2.7	1.0	0.8	2.4	6.2	10.6	7.7	59.8	4
Yacolt	14.9	4.0	6.5	3.9	3.1	5.2	0.7	4.0	4.6	7.2	12.1	10.3	76.5	2
Yale	14.8	10.6	8.0	4.6	5.2	3.7	0.8	2.1	4.6	7.8	17.8	13.8	93.8	8
Mt. Pleasant	7.7	6.0	5.4	3.7	4.2	2.7	0.9	1.3	2.8	4.5	8.5	7.3	54.9	14

Mean 78.8 inches
53 to 118 inches

Temperature.

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Skagit Power	30	34	40	48	56	61	67	64	58	41	39	35	48.4	4
Concrete	33	39	44	50	55	60	65	64	59	51	41	38	49.8	7
Gold Basin	34	36	43	44	49	57	62	60	54	48	41	36	46.8	2
Monte Cristo	34	32	37	41	46	53	61	63	54	51	38	36	45.4	4
Snoqualmie Falls	36	40	44	49	55	60	65	63	58	50	45	40	50.3	12
Stampede	29	33	37	43	47	57	64	64	55	45	36	30	44.9	3
Kosmos	36	40	44	49	54	59	65	63	58	51	44	38	50.0	8
Lester	31	36	42	47	52	56	64	61	58	51	42	35	47.8	8
Mt. Pleasant	37	40	46	51	55	60	65	65	60	54	46	39	51.4	14
Yale	36	40	44	50	55	59	66	64	60	53	45	40	51.0	8

Mean 48.6

45 to 51 degrees

PUGET SOUND STATIONS

Precipitation to nearest tenth of inch.

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Port Townsend	2.4	1.9	1.7	1.6	1.9	1.5	0.7	0.8	1.2	1.6	2.8	2.6	20.7	39
Bellingham	3.3	3.0	2.6	2.0	2.3	1.6	0.8	1.2	2.3	2.6	4.6	4.2	30.5	22
Blaine	5.6	4.2	3.3	2.5	2.8	2.2	1.0	1.2	3.1	3.6	7.2	5.8	42.5	16
Clearbrook	6.2	5.2	4.0	2.4	2.8	2.3	1.5	2.3	4.0	5.0	8.8	6.2	50.7	11
Orcas Island	3.4	3.0	2.3	2.0	2.0	1.4	0.8	1.0	2.1	2.8	5.2	4.7	30.7	24
Anacortes	3.4	2.9	2.2	2.0	2.0	1.4	0.7	1.0	1.7	2.5	4.6	3.7	28.1	20
Coupeville	2.2	2.1	2.0	1.6	1.8	1.4	0.7	0.9	1.6	1.4	2.8	2.8	21.3	14
Sedro-Woolcy	4.9	4.5	3.9	3.0	3.3	2.7	1.3	1.9	3.2	4.5	7.6	5.6	46.4	17
Snohomish	4.7	4.6	3.9	3.2	3.3	2.5	1.2	1.3	2.8	3.6	6.6	5.8	43.5	19
Seattle	4.6	3.8	2.8	2.4	2.1	1.5	0.6	0.5	1.8	2.7	6.1	5.4	34.3	23
Tacoma	6.1	4.5	3.5	2.9	2.4	1.8	0.6	0.7	2.3	3.2	7.3	6.9	42.2	29
Vashon Island	5.5	4.4	3.3	2.4	2.1	1.6	0.5	0.6	2.0	2.9	7.6	6.8	39.7	25
Olympia	8.2	6.8	4.9	3.6	2.6	1.7	0.7	0.7	2.7	4.4	9.4	9.3	55.0	36
Detroit	8.7	6.4	3.8	2.4	3.0	1.4	0.8	1.2	2.1	4.3	12.1	7.8	54.0	6
Bremerton	6.0	5.4	3.3	2.2	1.9	1.4	0.6	0.7	1.8	3.2	8.0	6.3	40.8	16

Sum 580.4

Mean 38.7 inches

21 to 55

Mean Temperature.

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Port Townsend	38	41	44	48	53	58	61	61	57	50	45	41	50.0	39
Bellingham	39	41	44	49	54	58	62	61	56	51	45	42	50.1	18
Blaine	35	38	41	46	52	57	61	60	54	48	41	38	47.6	16
Clearbrook	33	37	42	48	53	57	62	60	56	49	43	37	48.1	11
Orcas Island	38	40	43	48	53	57	59	59	56	50	44	42	49.1	24
Anacortes	37	40	43	47	53	57	61	60	56	50	45	40	49.2	9
Coupeville	39	42	44	49	53	58	61	61	56	51	45	42	50.0	13
Sedro-Woolcy	37	40	44	50	55	59	62	62	57	51	44	40	50.2	17
Snohomish	38	40	44	49	55	59	63	62	58	51	44	40	50.3	19
Seattle	40	42	45	50	55	60	64	64	59	52	46	42	51.4	23
Tacoma	39	41	44	49	54	59	63	63	58	51	46	41	50.6	17
Vashon Island	38	41	44	49	54	59	63	63	58	51	46	41	50.6	22
Olympia	38	40	44	49	55	59	63	63	57	51	44	41	50.3	36
Detroit	....	....	....	....	....	....	....	....	....	....	....	....	.....	....
Bremerton	40	41	46	49	54	58	63	62	59	53	46	42	51.1	5
													Sum 698.6	
													Mean 49.9	
													48 to 51	

EASTERN DIVISION

Mean Temperature (Degrees)

PALOUSE COUNTY

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Colfax	31	33	40	48	54	59	65	65	56	49	40	33	47.9	20
Rosalia	29	31	38	46	53	58	66	65	56	48	38	31	46.6	23

WALLA WALLA COUNTY

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Walla Walla	33	37	46	53	60	66	74	74	64	54	44	36	53.4	29
Zindel	35	39	48	56	62	70	79	78	68	56	44	37	55.9	10

YAKIMA VALLEY

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Cle Elum	27	29	38	44	51	56	64	62	55	46	37	29	44.9	16
Ellensburg	25	30	40	48	55	60	67	65	56	47	36	28	46.5	25
Yakima (near)	28	34	43	50	58	65	71	70	60	50	39	31	49.9	23
Sunnyside	....	....	....	....	....	....	....	....	....	....	....	....	.....	....
Kennewick	....	....	....	....	....	....	....	....	....	....	....	....	.....	....

MIDDLE COLUMBIA VALLEY

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Moltinger	34	39	49	56	62	69	76	75	66	56	44	38	55.2	15
Lyle	33	36	43	50	56	63	70	69	61	52	42	35	50.7	18
Sixprong	29	36	46	54	60	66	73	73	64	54	42	32	52.7	9

EASTERN DIVISION

Mean Temperature

CHELAN COUNTY

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Lakeside	26	30	40	51	59	65	73	72	62	51	38	30	49.6	24
Wenatchee	26	30	40	48	56	62	70	68	60	49	37	28	47.7	16

OKANOGAN COUNTY

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Conconully	22	26	36	47	54	60	66	65	56	47	35	26	45.0	15

COLVILLE COUNTY

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Colville	22	28	37	47	55	62	68	65	56	45	34	26	45.5	33
Cusick	26	26	36	46	54	60	65	63	54	45	37	28	44.8	8
Northport	22	25	36	45	52	58	64	62	54	43	33	25	43.2	13
Republic	23	27	37	47	55	61	66	62	55	44	35	28	45.1	14

SPOKANE COUNTY

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Spokane	27	30	40	48	56	62	69	68	58	48	38	31	48.1	34
Reardon	26	29	38	47	54	60	67	66	56	46	36	28	46.0	15

BIG BEND COUNTRY

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Hatton	28	34	44	52	58	65	73	69	61	51	40	30	50.3	10
Tinclad	28	32	44	54	63	70	78	75	66	54	40	29	52.7	10
Waterville	21	25	34	45	53	60	67	66	57	46	34	25	44.3	23
Wilbur	23	27	38	46	53	59	65	64	56	47	36	27	45.1	15
Lind	30	32	41	51	58	65	74	74	62	52	40	31	50.8	9

EASTERN DIVISION

Precipitation (inches and tenths)

PALOUSE COUNTRY

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Colfax	3.0	2.4	2.0	1.6	1.8	1.1	0.6	0.6	1.1	2.0	3.2	2.6	22.1	26
LaCrosse	2.2	1.6	1.2	1.0	1.2	0.9	0.4	0.4	0.8	1.1	2.0	1.9	14.7	25
Pullman	2.7	2.1	2.0	1.5	1.8	1.3	0.5	0.6	1.3	1.7	3.3	2.5	21.5	22
Rosalia	2.2	1.6	1.5	1.3	2.0	1.1	0.8	0.7	1.1	1.6	3.1	2.2	19.4	23

Mean 19.4 inches

WALLA WALLA COUNTRY

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Dayton	2.9	2.7	2.2	1.8	1.8	1.2	0.6	0.5	1.1	2.0	2.6	2.6	22.1	30
Walla Walla	2.0	1.8	1.7	1.5	1.8	1.2	0.4	0.4	0.9	1.6	2.0	1.9	17.2	42
Pomeroy	2.4	2.0	1.9	1.2	1.8	1.0	0.5	0.5	1.0	1.4	2.4	2.0	18.1	26
Touchet	1.4	1.0	0.7	0.5	1.1	0.9	0.1	0.3	0.4	1.0	1.2	1.0	9.7	10
Peola	2.9	2.4	2.2	2.0	2.2	2.2	1.1	0.8	1.3	2.1	3.7	1.6	24.5	6
Zindel	1.4	1.6	1.9	1.3	2.1	1.4	1.1	0.9	1.1	1.2	2.3	1.2	17.6	11

Mean 18.2 inches

YAKIMA VALLEY

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Cle Elum	4.1	3.1	2.2	1.2	1.1	1.0	0.3	0.4	1.2	1.8	4.5	3.6	24.5	16
Ellensburg	1.5	1.0	0.5	0.5	0.7	0.7	0.3	0.2	0.6	0.6	1.6	1.4	9.6	26
Yakima (near)	1.5	0.9	0.5	0.4	0.8	0.6	0.3	0.2	0.5	0.5	1.2	1.0	8.4	25
Sunnyside	1.0	0.7	0.3	0.4	0.7	0.4	0.2	0.2	0.5	0.6	1.0	0.8	6.8	20
Kiona	1.5	0.6	0.6	0.2	0.5	0.6	0.2	0.1	0.6	0.8	1.0	0.9	7.6	10
Kennewick	1.0	0.8	0.4	0.3	0.5	0.4	0.1	0.2	0.3	0.5	1.0	1.0	6.5	24

Mean 10.6 inches

MIDDLE COLUMBIA VALLEY

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Moltinger	1.2	1.0	0.8	0.6	1.0	0.5	0.2	0.3	0.5	0.8	1.1	1.0	9.0	15
Sixprong	1.8	0.7	0.4	0.5	0.7	0.6	0.2	0.2	0.4	0.7	1.3	1.3	8.9	9
Lyle	4.3	3.5	2.3	1.1	0.8	0.9	0.2	0.3	1.1	1.8	4.9	4.9	25.9	18
Wind River	18.0	6.5	7.0	4.9	4.7	2.5	0.4	1.7	6.2	6.4	15.9	9.6	83.9	4

EASTERN DIVISION

Precipitation (Rain and Snow, tenths)

CHELAN COUNTRY

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Lakeside	1.7	1.2	0.8	0.6	1.1	0.8	0.3	0.4	0.6	0.8	1.9	1.9	12.1	24
Stehekin	4.0	2.1	1.7	1.5	1.6	0.7	0.8	0.4	0.9	2.2	6.9	4.8	27.6	8
Wenatchee	2.0	1.5	1.0	0.6	0.9	1.0	0.4	0.3	0.9	0.9	2.1	2.0	13.6	16

Mean 17.8 inches

OKANOGAN COUNTRY

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Conconully	1.8	1.2	1.2	1.0	2.0	1.6	1.0	0.7	1.0	1.1	2.1	1.9	16.6	17
Loomis	1.1	1.4	0.9	0.8	1.9	1.9	1.1	0.5	0.8	0.9	1.9	1.3	14.7	11
Twisp	1.7	1.6	1.0	0.5	1.2	1.6	0.7	0.5	0.7	0.9	2.3	2.2	14.8	7

Mean 15.4 inches

COLVILLE COUNTRY

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Colville	2.3	1.6	1.2	0.9	1.9	1.6	1.2	0.7	0.9	1.2	2.3	1.8	17.6	34
Cusick	2.9	2.8	2.0	1.4	2.7	2.2	1.1	1.2	1.2	1.3	3.0	2.9	24.9	10
Northport	2.1	1.4	1.2	1.0	1.9	2.0	1.2	1.2	1.5	1.6	2.6	2.0	19.7	16
Republic	1.7	1.3	1.0	1.1	2.1	1.7	1.2	0.7	1.1	1.0	1.7	1.6	16.2	14

Mean 19.6 inches

SPOKANE COUNTRY

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Spokane	2.3	1.8	1.3	1.1	1.5	1.4	0.7	0.6	0.9	1.3	2.2	2.2	17.5	34
Reardon	1.8	1.9	1.0	0.8	1.6	1.0	0.7	0.7	0.9	1.3	2.5	2.0	16.3	16
Cheney	2.0	1.5	1.0	0.9	1.9	0.9	0.7	0.7	0.9	1.5	2.6	1.9	16.5	13

Mean 16.8 inches

BIG BEND COUNTRY

Station	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual	Yrs. Rec.
Ephrata	0.9	0.7	0.5	0.2	0.8	0.9	0.3	0.7	0.5	0.8	0.8	0.9	8.0	10
Hatton	1.2	0.8	0.6	0.4	1.0	0.7	0.3	0.5	0.4	0.8	1.2	1.1	9.1	10
Lind	1.4	1.5	0.9	0.8	1.2	0.9	0.4	0.4	0.5	0.9	1.8	1.4	12.0	10
Ritzville	1.3	1.4	0.7	0.5	1.0	0.7	0.3	0.4	0.6	0.8	1.6	1.7	10.9	16
Trinidad	1.4	0.9	0.4	0.4	0.5	0.8	0.4	0.2	0.4	0.4	1.1	1.2	7.9	12
Wahlocke	1.1	0.6	0.4	0.2	0.4	0.6	0.3	0.5	0.4	0.8	0.8	0.8	6.7	10
Waterville	1.7	1.3	0.9	0.8	1.3	0.9	0.4	0.5	0.6	0.8	1.5	1.9	12.6	25
Wilbur	1.8	1.3	0.7	0.7	1.5	1.1	0.6	0.6	0.7	1.2	1.9	1.7	13.7	17

Mean 10.1 inches

CHAPTER VII.

HEALTH AND LONGEVITY

Death Rate In Washington Very Low—But Little Over Half What It Is in 26 Registration States—Equable Climate and Pure Water Largely the Cause—Healthy Blood of Pioneers Also Contributes—Advance of Science Has Done Wonders—Possibility of Increasing Span of Life—Washington Most Healthy Spot on Earth.

The United States census report discloses the fact that the death rate in units of 1000 in Washington (state) is but little over half that in the twenty-six registration states, shown in detail by the table following:

	1917	1916	1915
California	13.9	13.5	13.7
Colorado	10.9	10.3	11.3
Connecticut	16.5	16.3	14.9
Indiana	14.0	13.6	12.7
Kansas	11.3	10.9	10.1
Kentucky	13.7	12.6	12.3
Maine	15.1	15.?	15.6
Maryland	17.1	16.5	15.8
Massachusetts	15.0	15.2	14.5
Michigan	15.2	15.1	13.4
Minnesota	10.3	10.7	10.1
Missouri	13.3	12.9	12.0
Montana	13.9	12.6	11.4
New Hampshire	16.8	16.1	16.1
New Jersey	14.6	15.0	13.8
New York	14.7	14.8	14.6
North Carolina	14.0	13.1	17.3
Ohio	14.8	14.4	13.0
Pennsylvania	14.8	14.6	13.8

Rhode Island	15.3	15.5	14.8
South Carolina	14.5	13.8	.....
Utah	10.4	10.4	9.9
Vermont	15.0	15.6	14.7
Virginia	14.3	14.7	14.2
Washington	7.6	7.7	8.1
Wisconsin	11.5	11.8	10.8
Average	14.0	13.9	13.3

The equable climate of Washington lays a solid foundation for good health and longevity. The absence of extreme heat or cold as shown by the official report to be found in this volume extending over a period of sixty years, abundantly proves this fact. Then it is scientifically proven that a moist atmosphere is a clean atmosphere. That when rain falls, or fog prevails, the air, so to speak, is washed and all impurity, if any, is removed, of which there is precious little coming from off the wide sweep of the Pacific Ocean and carried inland far beyond the eastern confines of the State by the prevailing winds.

We are blessed with pure water. The snows upon the high mountain ranges feed the rivulets and springs, the first forming rivers, the latter bursting out in springs on widely distributed areas, even on the islands of the sound at high elevation and along the fifteen hundred miles of shore line beaches of Puget Sound. Supplies of the precious fluid, as one may say, being found almost everywhere.

The cities of the State have taken advantage of the opportunity offered and have safeguarded the watershed from which to draw their supplies and have secured an abundance of this elemental conservator of health—*pure water.*

"In 1900 the average age at death in the registration States of the United States was 36.8 years. For the cities it was 32.4, for the rural districts 44.51 years. In 1913 the average age at death for the United States

registration area was 39.2 years for males and 40.6 for females and 39.8 for the entire population." (Whipple, page 375, "*Vital Statistics.*") It is now (1920) 44 years, average for males and females.

Turning to the birth rates, the Health Department of Seattle in 1918-19 published the report for the State for 1907 to 1919, inclusive, showing an average of 17.8—in other words, two births for every death for the period the tables cover for births and deaths—no race suicide here; no necessity for an open door policy for immigration.

Coming back to the death rate problem, we should note some abnormal conditions, bearing on the amazingly favorable showing for Washington State in the tables quoted. Although the figures no doubt are correct, the tables do not tell the whole story and hence to a small extent may be misleading.

If a person, for instance, looks out upon a thronged street in Seattle where I am writing, he can discover a lack of the usual percentage of old men he could see upon the streets of some older settled sedate cities such as, for instance, Philadelphia, with a death rate of (25.68) in 1918, or Boston (22.24), or Pittsburgh (25.65).

Again, a small percentage of our old men go south, which is perhaps reflected in the higher death rate of California as a state for the same period, 1915-16-17, showing the rate of 13.7, 13.5, 13.9 for the same respective years named for Washington; thus showing 56 per cent greater rate than in Washington.

Then again we should note the recent reported increase of our population, are nearly all below the middle class age and of a virile selected active class, willing to do and dare, that contribute to the result shown.

And again, may I not with propriety point with pride to the blood of the pioneers, who founded this

State, coursing through the veins of an active class of native sons and daughters who have come upon the stage of action while their forbears sleep beneath the sod of the State they loved so well—the pioneer that survived the ordeal of the "battle of the plains," leaving so many of the physically weaker behind to sleep beneath the sands.

When we compare the cities of the Southern State, the ratio is increased, though the tables are incomplete and preclude complete comparison. It is noticeable that in both cities—San Francisco and Los Angeles—the birth rate is less than the death rate. The death rate of San Francisco for 1918 was 20.08, birth rate 16.90; for Los Angeles 15.68, birth rate 14.75.

In bulletin 30 (1909) prepared for the National Conservation Commission by Professor Irving Fisher of Yale University and member of the commission, this statement is made: "The length of life in Sweden and Denmark is over fifty years; in the United States and England forty-five; in India less than twenty-five. The tables for Massachusetts for 1893-1897 show an average duration of life in that State of forty-five years as compared with forty in 1845, and thirty-five an estimate of 1789, based, however, on doubtful returns."

In the registration area of the United States (i. e., where records are kept in 26 states) the average death rate is 14 per 1000; in France it is 20; in India 42.

Washington now has a law to prevent marriage alliances among criminals, paupers, and the feeble minded and all persons suffering from transmissible diseases, and for certain crimes. It is now provided in Indiana that confirmed criminal imbeciles and rapists, when it is deemed advisable by experts shall be unsexed. Under this law over 800 prisoners have been sterilized to date (1909). The recent Washington law provides for similar treatment.

Antiseptic surgery has in the last century been the greatest triumph of the medical profession. It has greatly reduced the mortality from operations and is illustrated by the figures in army operations, and tables are given to verify the statement. A large part of the decrease in death rate can be attributed to scientific sanitation, hygiene, and medical discoveries.

"The hygiene of school children is especially important because of its application to human life in its earliest stages. There is a world wide movement, led by Switzerland and some other countries of Europe, to obtain and to apply knowledge of how to educate the mind without weakening the body. As it is, school children are especially exposed to contagious diseases which under present conditions, often sweep through a school before the local health board even hears of it."

Life is lengthening. During the first three-quarters of the nineteenth century the rate was about twenty-nine years. At present life in Massachusetts is lengthening at the rate of about fourteen years per century; in Europe about seventeen.

At the date of my birth, ninety-one years ago (1830), the average of life in the United States was a little less than thirty years; it is now forty-four. The recorded data is fragmentary and imperfect but I am satisfied the figures named above are approximately correct. In Geneva the records go back over three centuries showing the following life span:

Sixteenth century, 21.2; 17th century, 25.7; 18th century, 33.6; 1801 to 1883, 39.7.

I repeat that this wonderful progress became possible because of the advance in the science of medicine, surgery, and sanitation. If once an intelligent citizenship will fully co-operate in sanitation with the medical profession, to which it is able to point the way, there is no reason why the span of life may not be increased

to a hundred years from that of less than half a hundred as now. It is a far cry from twenty years as in the 16th century to forty-four in the United States in the 20th, all attributed to the progress of our civilization and to science of medicine, sanitation and prevention of epidemics that more than doubled in four centuries.

With the pure air, pure water, and most equable climate, Washington heads the list as the most healthy spot on earth. I do not write this in a vainglorious, optimistic mood, but as a record of a sincere belief, resulting from painstaking research for facts to prepare for writing this chapter. It has been a revelation.

CHAPTER VIII.

LIBRARIES

Free Library System of Recent Date—Libraries Have Existed Since Dawn of History—Only for the Favored Few—Pioneers Established Libraries—Territorial Government Established Library at Olympia—Seattle Public Library—Carnegie Endowment—Organized Work for Blind—Americanization Work of Library—The People's University.

One might almost say that the last quarter of a century, beginning in 1895, gave birth to the free library system as seen in so many libraries of the present day. A wonderful change has taken place in the management of libraries, a new era has displaced the old, a marvelous system has been ushered in that is destined to revolutionize the use of books by the public.

Libraries, so called, doubtless existed back to prehistoric time, but were really store houses of books for safe keeping rather than for use by even the favored few. Libraries are no longer confined to rich families. Like the free schools and free roads, they are for the benefit of all.

The pioneers of Washington were accustomed to educational privileges. They were not slow in establishing Public Libraries.

The Steilacoom Library Association was formed in 1854; Port Madison in 1860; Good Templars' Lodge of Olympia in 1869 and Seattle in 1862, in connection with the University.

The splendid library at Tacoma is the outgrowth of the old Mercantile Library, started in 1886 by the ladies of Tacoma and was given to the city in 1894.

Public Libraries all over the northwest grew out of such beginnings as these.

The Pioneer Public Library of Washington, the State Library at Olympia, was established by the Territorial Government and was the pride of Gov. Stevens who made the initial purchase of 2,500 volumes at his own expense.

In 1898, Allen C. Mason established a free library in North Tacoma. The history of this library and the way in which it built up North Tacoma shows that education, by this system, is a popular and far reaching method. Mr. Mason maintained this library at his own expense and subsequently gave it to Tacoma.

Dexter Horton started the funds which saw the initial purchase of the Seattle Free Library in 1890, the same year in which the Everett Public Library was established.

The Seattle Public Library report for 1920 gives the following figures:

Date of organization, 1891.

Date of opening present central library building, Dec., 1906.

Cost of Central library building, $348,734.

Amount of Carnegie donation:

Central library	$220,000
Six branch libraries	190,000
Fund promised for Fremont branch, about to be erected	35,000

No. of volumes Jan. 1, 1921—335,509.

No. of borrowers Jan. 1, 1921—80,481.

No. of books circulated for home reading in 1920 1,826,904. In addition, different reading rooms used by over a million people.

Maintenance fund provided by city for year 1921, $312,405.35.

No. of branch libraries—9 (7 in permanent buildings and 8th soon will be).

No. of deposit stations—10.

No. of school rooms supplied with books in 1920—438.

There are 49 Public Libraries in the State of Washington, 9 of which have received the benefit of the Carnegie endowment. This fact, coupled with the foregoing table, which gives a representative use of all libraries (in proportion to the population of the locality in which it is situated) is almost astonishing when we realize the influence a Free Public Library has upon the populace.

Aside from the free reading rooms and the loaning departments, the rural circulating library and the magazine departments, the reference rooms are coming more and more in use. The children are specially cared for in the juvenile departments where, aside from the loaning and research departments, thought and care is given to the child mind in the telling of stories and oral work out of school hours and during vacations.

One of the noblest achievements of the present Library workers is the organized work for the blind. There are 1,000 blind persons in the State of Washington, and they may receive books in embossed type, thru the mails, free of charge.

The war work, carried on by most of the libraries, has developed into a bureau in conjunction with the U. S. Employment Bureau, for ex-service men. Thousands of vocational reading lists have been sent out to the men, thereby helping them to prepare themselves for positions.

The men in mining camps and remote logging districts are sent the old readable patched books free; and any one living far from the library may, for a small sum, have books sent to him by parcel post.

In connection with the library and its benefits, it is fitting here to mention the great monument Edward S. Curtis has given to the U. S., in his book "The North American Indian". The complete work will consist of 20 volumes of illustrated text and 20 portfolios of Indian pictures. The work is to be sold at $3,000 a set. It has the approval and patronage of Pres. Roosevelt, J. Pierpont Morgan, and Andrew Carnegie, and that of the officers of the Smithsonian Institute at the time of its submission.

The Americanization work of the library, while the newest department in its activities, is very important. Night schools, teachers of immigrants, women's clubs, naturalization classes and other organizations have come to depend upon the public library—the people's University.

CHAPTER IX.

SCHOOLS

The Pioneers Interested In Schools—Crude Buildings Were Used —At Times But Few Scholars—But Foundation Laid For Unequalled System—First Public School In Vancouver, 1833 —Steady Progress Made—Now Fine School Buildings In Every Locality—Nearly 300,000 Pupils Receiving Instruction—More than 10,000 Teachers In State—High Schools Important Branch of Educational Work—In Last Decade a Great Increase In Attendance—Washington Second in U. S. According To Population—Normal Schools of State Doing Splendid Work—Progress the Watchword.

The Pioneers turned their attention to schools the first thing after they had secured a roof on their cabins. In one instance, at least, this work was undertaken while the family lived in a big stump. I know several instances where the family lived in the stump of the ancient-growth cedar. I utilized one as an office at the Lewis and Clark Fair at Portland in 1905, fifteen feet in the clear inside. This was a fir. I have seen larger cedars.

These improvised schools were often attended by but a few children and were not so much in the nature of "public" as "private" schools. But they served excellently and were really the beginning of the public schools which developed into the unequalled system we have today.

Many of the pioneers, while not illiterate, regretted not having a better education, were themselves intent upon giving their children a better chance than they had had. I knew one who could neither read nor write, even his own name, who finally held an important office and submitted to be taught to mechanically make a series of

marks to represent his name; this man joined with the majority to hasten the day his children could attend school.

Of course, the houses were crude affairs, generally log cabins with the clapboard roof that answered for the ceiling overhead, sometimes with puncheon floor—not often though; in low squat buildings as though night overtook the builders before the last round of logs were in place.

The teachers were generally content though salaries were ridiculously low, the children eager to learn and so the younger generation of that day were not illiterate. Those who are living now, 1921, are very old men and women, but a great many have joined the "Great Majority". The reader must remember, the period covered is three score or more years ago.

The first public school we have record of in the Northwest was opened at Vancouver (now Washington) in 1833. John Ball was its teacher. He was shortly succeeded by Solomon H. Smith, who taught for 18 months. There were 25 pupils enrolled at this school and since all grades were indicated, it must have been a hard task.

A. W. Moore opened a school in Olympia, Jan. 1, 1853. In 1854, Bernard Cornelius established a school also in Olympia.

From July to December of 1854 there was a school at Steilacoom taught by Mrs. Sherwood Bonney and Miss Eveline Babb. Thirty pupils were enrolled at this school.

In 1854, Mrs. Blaine, wife of a Methodist minister, opened a day school in Seattle. Some of Seattle's pioneers tell with a great deal of mirth of this school house which was a room in Mrs. Blaine's cabin accommodating eight or ten pupils. Rev. Daniel Bagley succeeded her as teacher and out of this little school really

grew the movement which developed the University of Washington. Mr. Bagley was a forceful, determined minister with a keen zest for educational progress. He was chosen chairman of the committee which had charge of the building of the University and borrowing $20 for "office expenses", he forged ahead with the co-operation of the community.

The first permanent public school building was opened in Seattle in 1867 and the Holy Names Academy, parent of many of its kind, was established in 1868, and later became legally entitled to confer the academic degree.

The first State Board of Education came into life when the Territory became a State in 1889. In 1909 a new code was formed which gave us the present (1921) State Board. This board must consist of Supt. of Instruction, Pres. of U. of W., Pres. Washington State College, Pres. of one of the Normal Schools and three well qualified persons appointed by the Governor of the State.

From the small building of Mr. Bagley's school to the imposing High Schools of today is a long, long way, a way of sacrifice and heroic service; but in looking back I am glad I had the opportunity of contributing my services in this great achievement.

I have seen business colleges, fraternal schools, kindergartens and vocational schools springing up every place.

From the beginning of pioneer days, many fine institutions of higher education, of a private or denominational character, have been established in this State, such as Whitman College, at Walla Walla, Puget Sound University and Whitworth College, Tacoma; Vashon College; Colfax College, and the Gonzaga College, Spokane.

The State School for the Blind was established at Vancouver in 1888 and the State Institution for the Feeble Minded at Medical Lake in 1905. Both institutions are under the control of the Board of Public Instruction.

There are 2,554 school districts in the State of Washington at this writing (1921) with 7,680 members of boards, prohibited by law to receive pay for their services.

The last registration of pupils (1920) receiving instruction in public and private schools shows an aggregate of 278,378, with 10,197 teachers.

There is now (1921) a Normal School for training teachers at Cheney, Bellingham, Ellensburg, Pullman College, Whitman College, and the State University.

The sale of school lands was the first medium by which funds were provided for school purposes. The school law provides a system whereby the state, county and school district may tax itself for school funds.

Besides the public schools and the mediums for higher education and the many Catholic institutions of learning, there are so many private and vocational schools that it seems absurd to think there should be one illiterate child in the whole Northwest.

By referring to the table which follows, it is shown the greater part of teaching in the schools of Washington is by women and at a much less salary than is paid to men.

The aggregate salary paid to teachers for the year ending June 30, 1920, is $2,487,442.87 to men, and $9,343,988.94 to women; a total of $11,831,431.67.

Counties	No. of Different Teachers Employed		Average Salary		No. of High School Teachers Employed	Average Salary	
	Men	Women	Men	Women	Total	Men	Women
Adams	15	126	$1,341.00	$ 928.20	15	$1,193.00	$1,110.00
Asotin	20	55	1,141.15	829.78	14	1,269.00	1,078.75
Benton	22	92	1,261.09	962.72	21	1,230.00	1,168.06
Chelan	28	178	1,384.81	954.84	44	1,294.62	1,131.61
Clallam	14	87	1,328.75	947.11	9	1,500.00	1,242.57
Clarke	51	202	1,170.73	928.50	37	1,249.27	1,083.58
Columbia	17	60	1,198.48	864.15	10	1,360.47	1,055.70
Cowlitz	19	110	1,167.55	818.30	16	1,035.00	921.54
Douglas	24	117	1,068.68	877.38	11	1,462.50	1,159.28
Ferry	6	45	1,109.50	763.74	4	.....	967.50
Franklin	10	61	1,292.25	989.26	10	1,437.50	1,182.22
Garfield	7	43	1,092.14	832.97	4	1,300.00	1,100.00
Grant	21	100	1,171.66	860.77	10	1,212.50	1,039.37
Grays Harbor	38	260	1,631.42	1,141.53	50	1,506.14	1,384.90
Island	6	45	1,184.35	801.90	5	810.00	888.75
Jefferson	10	49	1,390.00	850.66	9	1,570.00	1,004.28
King	325	1,751	2,025.75	1,466.88	428	1,929.01	1,674.52
Kitsap	17	167	1,256.65	931.79	20	1,174.53	1,169.68
Kittitas	22	155	1,649.89	1,028.50	34	1,688.48	1,180.55
Klickitat	24	106	1,048.80	843.56	13	1,275.00	962.72
Lewis	67	264	1,291.11	863.26	55	1,162.32	952.40
Lincoln	36	195	1,281.36	893.43	32	1,389.60	1,059.64
Mason	8	47	1,267.62	830.10	6	1,320.00	882.00
Okanogan	26	170	1,123.40	799.02	21	1,172.50	1,055.52
Pacific	17	132	1,554.64	929.97	24	1,416.00	1,036.05
Pend Oreille	9	59	982.50	834.50	6	1,125.00	967.50
Pierce	131	728	1,757.15	1,164.53	165	1,675.40	1,363.60
San Juan	6	25	908.00	786.00	4	900.00	886.00
Skagit	39	241	1,455.51	933.25	45	1,365.37	1,124.59
Skamania	7	30	1,154.28	841.91	4	.....	776.25
Snohomish	87	427	1,532.67	1,046.85	103	1,569.74	1,219.75
Spokane	166	840	1,587.08	1,129.22	223	1,611.57	1,378.00
Stevens	39	165	1,034.96	807.67	24	1,330.00	1,027.07
Thurston	37	138	1,357.00	956.90	27	1,459.00	1,089.65
Wahkiakum	3	31	916.66	839.19	1	855.00	.....
Walla Walla	35	208	1,602.28	1,129.03	48	1,507.69	1,349.21
Whatcom	65	336	1,408.70	982.39	83	1,417.82	1,187.75
Whitman	78	332	1,285.99	928.50	71	1,292.46	1,080.07
Yakima	72	396	1,530.18	1,040.31	89	1,631.85	1,287.23
Totals	1,624	8,573	$1,531.97	$1,089.93	1,795	$1,617.37	$1,303.79

In the biennial report of Josephine Corliss Preston, State Superintendent, for 1919-20, it is shown that the total value of school houses and grounds in the State amounts to $38,338,564. And of apparatus, furniture and books $5,368,704. This is a splendid showing for a young state and indicates the progressive spirit that animates the people in the matter of education.

The school census for 1920 showed 363,746 of school age and enrollment 290,107.

February 5th, 1884, the directors of the Seattle schools passed and recorded a resolution; "that the use of the raw-hide as a means of inflicting corporal

punishment, is hereby forbidden by the Board." This was a step in advance of what I can remember when the ferrule was used on the open hand so severely sometimes as to raise a blister; the brutal teacher holding the pupil's hand rigidly, inflicting the cruel blow with his right hand without mercy or compunction. Then again, lest we forget, I can remember when the "tippling" school master was tolerated and had tippled outside the sober point, this from experience as a five year old being paddled black and blue by a half-drunken Master (I won't call him teacher), in Ohio eighty-five years ago.

Here's another item in Seattle school experience:

"Again, the new school desks did not arrive until the Christmas holidays, so that for three months a thousand pupils sat on boxes, barrels, kegs, stools,—in short, on any and everything;"—extract from the school report to the school directors of Seattle, July 3rd, 1889.

I can beat that story from my own memory of having to sit upon rough saplings, (or logs, shall I say,) with legs too long for my legs, leaving my bare feet dangling in the air.

Yes, times have changed; yet we still have the growler with us.

There is, however, another side to the pioneer school life. The children were eager to go to school, eager to learn, many had to walk a mile, some two miles and even three miles to get to the school and that after having done up the chores, often involving milking a cow or two, getting the wood or other stunts incident to farm life. Then they had drawn plenty of fresh air into their lungs during the morning hours and their long walk and found plenty of it inside the school room, rushing in from the cracks between the logs. Healthy? Healthy is no name for it; "boiling over" with an exuberance of spirit prompting to do most anything to "work it off", even to locking the school master out until he would treat.

Well, it seems now almost a new world and while remembering their pranks we must remember these rollicking school girls and boys have made the nation what it is, the greatest of any on earth. One great saving point, they had the counsels of Father and Mother and the lesson of self-reliance in the roughing experiences.

High Schools

The High School is a very important branch of our educational establishment. No feature of the public school system has been undergoing greater curricular changes in the last quarter of a century than that of the high school. In these years the high school's functions have been greatly extended and many of its old-time courses changed and modified. Greater freedom of election in the kind of studies the pupils wish to pursue is now given than formerly; and many of the subjects that were mandatory are now optional. This is as it should be. When pupils have successfully passed through the eight grades of the common school, they have arrived at an age well along towards maturity and should be accorded the privilege of choosing the course of studies that will best fit them for the line of activity they intend to follow in the future. Compelling students to master subjects for which they had no taste or aptitude, as was formerly the custom, was a most vicious system, and entailed a loss of valuable time both to the instructor and the student.

The increase of high school attendance has comparatively far outstripped the increase of the population of the state. Since 1910 the high school attendance has increased 114 per cent. Washington now ranks second in this respect in the United States.

During the year 1918-19, there was a high school enrollment of 37,317; in 1919-20, 42,419; an increase of 5,102 in a year.

The branches which show the greatest ratio of increase in the year last past are: French and Spanish,

General Science, Chemistry, Mechanical and Free-hand Drawing, and Sociology. The following show a decrease: Latin, Political Economy, Physical Geography, Physiology and Botany. In the remaining studies there has been practically no change.

On the whole, the high schools of the state have made remarkable progress.

State Normal Schools

When Washington was admitted to statehood in 1889, one of the first acts of the legislature, which convened the following year, was for the establishment of a State Normal School.

Ellensburg, by reason of being centrally located, was chosen as the site for the new institution intended for the training and preparation of teachers for our public schools.

Its real beginning as an operating institution was made in 1891 in five rooms on the second floor of the public school of Ellensburg.

The faculty consisted of the principal and three teachers.

A very modest beginning certainly. But here as elsewhere in the state, the march of progress has been rapid. There are now seven fine buildings occupied in which thorough instruction is being imparted to several hundred students destined for future teachers of the state.

The Bellingham Normal was created by Act of the Legislature, 1895, and $40,000 appropriated for first building; but it was not until 1899 that the school was formally opened for work, with an enrollment of about 100 students.

There are now four large and well-equipped buildings occupied besides the central heating plant.

Plans for a new women's dormitory are completed and construction will soon begin. It will cost $250,000.

There is also a Normal School situated at Cheney, Eastern Washington, which is developing into a very large institution.

Certificates issued for the last biennium numbered 867.

The legislature has established another Normal at Centralia, but failed to make the necessary appropriation for its maintenance, so that it is not yet opened.

In addition to the schools mentioned, the University of Washington and the State College at Pullman, provide courses of study for those wishing to follow the teaching profession and grant diplomas to such.

CHAPTER X.

THE UNIVERSITY OF WASHINGTON

Washington Proud Of Its University—A Very Modest Beginning Obstacles Encountered and Overcome—Its First Location Now in Center of Seattle—Present Site Beautifully Situated —Imposing Halls and Colleges—Splendid Equipment—Excellent Faculty—Students Prepared For Learned Professions—Enrollment Increase Phenomenal—Valuable Land Endowments—Future Prospects Loom Large.

The people of this state have many things for which they should be thankful, as well as many of which they should feel justly proud. Nature has certainly been lavish of her gifts and man has wrought with hand and brain to improve and develop the raw material with unflagging energy and the application of the most consummate judgment and skill.

In expanse of virgin forests, in unexcelled water power, in the number and natural advantages of her land-locked harbors, in the fertility of her soil, in the beauty and grandeur of her lofty mountains, she stands without a peer.

In the space of the allotted lifetime of a man, since the first hardy pioneers began to carve out homes for themselves in this new, and, at that time, unsettled wilderness, there have sprung up, as by the wand of the magician, beautiful and populous cities, humming with the industry of hundreds of factories, with wharves and piers to which can come in safety, the largest ships that traverse the seas. In these also are thousands of beautiful and artistic homes and commercial buildings that can vie with any to be found in far older cities.

Transportation routes, by rail, by water and by hard-surfaced roads are numerous and up-to-date. Agriculture and horticulture have been carried to a high degree of perfection and a school system has been developed that is the equal, if not the superior, of those of the oldest and wealthiest commonwealths of our land.

These are a few of the things that the people of this state have reason to be proud of. But more worthy of praise and more lasting in its effects than any of these, is the great University which was given birth in the little water-front village of Seattle only sixty years ago, and which has grown in that short space of time to be one of the largest and most important seats of learning in the land.

It was a modest beginning indeed, heralded by no sound of trumpets, when the first buildings for this infant educational institution were erected on the fringe of the wooded hills where is now pretty near the center of the commercial life of the great city of Seattle. And to think that some of those who helped to grub the stumps from around those unpretentious buildings are still living here in Seattle, helps to impress upon us, how young this seat of learning really is, that is destined, under proper management, to be one of the main factors in making the State of Washington famous.

With what prescience these few enthusiastic men must have been gifted, to attempt in a little struggling burg in the remotest frontiers of civilization, the establishment of the foundations of a university for development of higher education. It baffles belief. Yet here are their names: Arthur A. Denny and Charles C. Terry, who donated the ground, Daniel Bagley, Commissioner in charge of the original buildings, and A. S. Mercer, the first president and Mrs. O. J. Carr, the first teacher.

There cannot be found in the history of universities, another instance where the start was made under such

adverse conditions. One unique trouble was the difficulty of finding students willing to take advantage of the opportunity offered of acquiring an education. President Mercer had to visit every logging camp on the Sound to try and induce young men to come and enter the school. He had great difficulty in getting any to respond to the invitation. Finally, securing twelve by promising to pay them $1.50 a cord for chopping wood on the grounds. A year after the opening, there were about sixty pupils in attendance; the majority residents of Seattle; the others came from Portland, Victoria and Olympia.

For years it was a hard struggle to keep going at all, and in the year 1868, owing to financial and political troubles, it was closed for about two years.

Never did an institution of learning have to contend with more serious obstacles than the University of Washington in its younger days. Not indeed, until within the ten or twelve years last past, was it able to assume anything like the commanding position which it now holds.

But from what has been said, it must not be inferred that it has attained anything like the high standards of culture to be found in those universities which have been in existence for centuries. No one should expect a University of such youthful years as that of Washington to be able to turn out such finished scholars in every branch of human knowledge as Paris, Oxford, Cambridge, Vienna, Heidelberg, Gottingen or Bologna, in Europe; nor as Harvard, Yale and Princeton, in our own country. It now has a larger enrollment than many of these; but numbers do not necessarily imply excellence. Perhaps, if entrance were not so easy of attainment, the result would be better. Entrance to a university was supposed to imply a preparatory course in college. Here high-school graduation is deemed sufficient.

But time will right all these minor defects, if they are defects. The old Universities of learning have an atmosphere, an indefinable something that is felt though not seen, that permeates the whole institution and binds the alumni in a kind of non-obligation free masonry that departs only with life. It takes a long time to create this atmosphere in comparatively new institutions; they have to get along without it.

Except in the higher branches of scientific or philosophical research, the Washington University is prepared to impart a full and sufficient knowledge of every branch of learning required in the professions of Law, Journalism, Pharmacy, Mining, Business Administration, Teaching, Fishery, Fine Arts, Engineering, and Forestry. From the beginning, a Preparatory School was maintained as a part of the University, because a great many of those seeking registration had not received adequate instruction in the other schools. This was abandoned in 1902.

From the beginning of the present century, the enrollment increased by leaps and bounds. In 1900 there were about 600 students enrolled, in 1921 upwards of 7,000. This is a phenomenal increase. It is very doubtful if there is a University on earth that can show such a percentage of increase. So much for progress.

In 1895 it was seen that the location of the University must be changed. The buildings were becoming old and unsuited; more space must be had for the expansion of the institution; and the city was rapidly building up all around it. From the financial standpoint, also, there would be a great advantage, by leasing or selling the present location and acquiring much cheaper property in the suburbs where the University would be away from the noise and bustle of commercial activities. The change was made and a superb location secured which is now covered with imposing and picturesque halls and other buildings situated in artistic irregularity amongst beautiful trees, surrounded by verdant and

well-kept lawns, bordered with flowers and shrubbery. It is indeed a thing of beauty and a joy forever.

Many of the graduates of this University have attained prominence in the professional and business world, but the scope of this article will not admit of giving a list of these. However, there is one name among the number graduating in 1885, that deserves especial mention, for to him is owing in no small degree, the prominence attained by this young giant among the great Universities of America; that graduate is Edward S. Meany. He is a part and parcel of the institution. Other brilliant and progressive men have performed great services in advancing the interests of the University; but Professor Meany is more closely identified with its growth and development than any of the others. His untiring zeal in gathering and preserving all the historical data connected with the early settlement and development of the State of Washington, deserves the gratitude of all our citizens.

There is yet another whose name must not be omitted for he has ever been actively identified with the University as with the city of Seattle. The man who sixty years ago helped to clear the site for the University, Clarence B. Bagley. He was one of the first enrolled in the infant institution when there were only about thirty scholars in attendance and has lived to see it reach the astounding number of more than 7,000 in 1921. These figures tell the whole story of the rise and progress of our famous seat of learning.

Biennial appropriations also show the vast strides made by the University during the past 25 years. Biennium 1895-6-7, $90,000; biennium 1920-21-22, $2,506,-044. No comment is necessary.

The faculty is composed of men and women of sterling qualities and high mental attainments and gives general satisfaction. Should the same progress be made in the next sixty years as in the three score just passed,

the enrollment then would reach such an incredible number as to be entirely beyond the range of possibilities. Progress will be made, and great progress, no doubt, in the coming years, but in the matter of enrollment, the ratio of increase in the past can not be approached.

The old university site consisting of ten acres situated in the center of the business district of the city of Seattle is held under a 47-year lease, bearing date of 1907, by the Metropolitan Building Company, bringing at present $40,000 per annum. This is a very valuable piece of property and will unquestionably increase greatly in value during the coming years.

The present campus originally consisted of 341.76 acres; but from accretions caused by the recession of Lake Washington and the "fill" from the dredging operations of the Government canal, upwards of a hundred acres have been added.

This has been a very valuable acquisition to the university campus, affording an opportunity of making the grounds much more attractive than could possibly have been done without this additional acreage.

The magnificent concrete s t a d i u m constructed through the efforts of the Associated Students of the University is a most desirable adjunct to the campus.

The total value of the University property, at the present time, is approximately $10,000,000.00.

The operation and maintenance of an institution of such large proportions necessarily entails a heavy annual expenditure; much larger than the income derived from its present resources.

To meet the deficiency the State Legislature every biennium appropriates a sum usually sufficient to keep all obligations paid up, as well as make provision for the inevitable annual increase in operations and maintenance.

At the session of the Legislature last winter the question of cutting down expenses in every line, right or wrong, seemed uppermost in the minds of the members.

In accordance with such a program the estimate for the University was slashed to such an extent as to hamper seriously the efficiency of the institution.

This is unfortunate. The University is well deserving of support and encouragement from the people of the state and should not be made to suffer for sins of extravagance in other lines. It is to be hoped that the next legislature will manifest a more enlightened consideration for the needs of this great institution in equipping mentally the young men and women of our commonwealth to meet all the requirements and help solve some of the problems of this very progressive and epochal era.

CHAPTER XI.

WASHINGTON STATE COLLEGE

Known As "Agricultural College"—Illustrates Wonderful Progress of This Age—Situated At Pullman—In Very Rich Farming Region—Its Timber and Land Endowments Large —Valued at $10,000,000—Instruction Given Includes Many Subjects—Enrollment About 3,000—Agriculture and Engineering Featured—Modern Languages and Fine Arts Not Neglected.

The following exhaustive history of the founding, progress and scope of the State College at Pullman, Washington, known as the "Agricultural College," vividly illustrates the wonderful progress of the age in which we live. All such institutions of our nation have sprung into existence within the life-time of our state, and which, be it said, is at the front in aspirations and accomplishment with others of the nation at large.

We "Old Fogies", as some of the younger generation are wont to call the few left of the preceding generation, may feel that perhaps the young giant—the College—has wandered far afield from the original design of the founders and that their ambition has led them into too wide fields of advance studies for the best concentration on the work the name implies, "agriculture." Be that as it may, this writing is not intended as a matured criticism—more as the shadow of a thought passing in the brain of an elderly gentleman, the survivor with the third generations of average life, and of the life of such institutions under review.

As a citizen of the state I can but express a glow of pride when viewing the achievements of the college made possible by the zeal of the faculty under the inspiration of its President and to bid them God speed in the good work.

The State College of Washington is located at Pullman, in the heart of one of the richest farming regions in the United States. It is about eighty miles south of Spokane, on the Northern Pacific and O. W. R. & N. railways.

Though but little more than a quarter of a century old, this College ranks among the four or five largest educational institutions in the West. Its land and timber endowment, not yet fully realized upon, is valued at approximately ten millions of dollars. About nine acres of floor space are occupied by class rooms and laboratories. Nearly three hundred teachers, scientists, administrative officers, extension specialists, and other employes, were on the employment rolls in 1921. There is a 70-acre campus, a nine-acre athletic field, and farm and experimental grounds aggregating six hundred acres.

The buildings and equipment have a present value in excess of $1,750,000. The instruction given includes home economics, mechanic arts and engineering, agriculture, sciences and arts, veterinary science, mining engineering, music and fine arts, education, pharmacy, military science and tactics, physical education, and vocational training in a department of elementary science. The total enrollment in 1921 approximated 3,000 students, from Washington principally; also from Central and South American countries, the Orient, Europe, Palestine, India, and elsewhere.

This College is one of the "land grant" institutions, so-called, of which there are more than fifty in the United States, all founded by the federal Morrill Act of 1862. Supplementary legislation broadened the colleges by adding the agricultural experiment stations in 1887, the "extension service" in 1914, and, at other times, making additional provision for instruction in engineering, agriculture, and the sciences and arts.

More than one hundred agricultural bulletins have been published by the agricultural experiment station,

mainly as the result of studies covering crop destroyers, diseases of plants and animals, soil problems, and in fields of applied engineering science—farm and home sanitation, highway construction and maintenance, irrigation engineering and reclamation. An extensive study undertaken by the department of geology resulted in the publication of a book by Dr. Solon Shedd, entitled, *"The Clays of Washington."* The publication revealed the location, quality and uses in manufacture and industry, of many native Washington clays. The school of mining has made a survey of the mining resources of Washington.

The State College of Washington and its sister institutions the nation over, combine investigation and teaching. Agricultural students, for example, are taught more from the soil, plants, and developing plant and animal life generally, than from books. A new truth discovered in the experiment station laboratory means a new truth available for the students. The same holds for the engineering students, particularly those whose work takes them through the mines, the electrical and waterpower plants, and other large engineering projects of the state.

"Engineering and agriculture" are held to be of like importance in the founding act of the land grant colleges—the First Morrill Act, of 1862—and are so at the State College of Washington. The new Mechanics Arts Building in form and outward appearance duplicates James Wilson Hall, the new agricultural building. The courses in engineering are strong and well developed, including civil, electrical, hydro-electrical, mining, mechanical and automobile engineering. The expansion in mechanical engineering is particularly marked in recent years, particularly as relating to automobiles, farm tractors, and all kinds of farm machinery. "Chemical engineering" is of comparatively recent development among the great engineering sciences, to which the State College and its sister universities and colleges throughout the country are so strongly devoted. It is

simply an application of chemical science to manufacturing and productive industry of many kinds, and holds splendid opportunities for ambitious young men and women.

Though stressing engineering and agriculture the State College of Washington and its kind do not by any means exclude the liberal arts and sciences. The State College has a strong school of music which is well attended. From the School of Music springs, naturally, the College "Glee Club" and various choruses and musical organizations.

Also, there is at this institution, a department of foreign languages. Spanish and French are rapidly expanding courses, Spanish particularly, the latter expansion looking, probably, to the increasing commercial contact of America and the Latin nations south. There is an equally strong department of English which emphasizes training in public speaking and journalism. The course in geology is well established, and has made a good record with its graduates.

At the present time there is hardly a town of any size in Washington but that has in it one or more graduates of the State College's school of pharmacy, either as drugstore employee, manager, or proprietor. The college of veterinary science is nearly as well represented. There are nearly two hundred teachers of manual training in Washington and the Northwest, of State College training. In languages, science, agriculture, athletics, and other lines of teaching, the total number of W. S. C.-trained teachers is much larger. Recently the department of physical education undertook the training of teachers of athletics for the public schools of Washington, which by law are required to give work of this kind.

The "extension service" added by the Smith-Lever Act of 1914, now has departments and ramifications which reach to practically every city, town, neighborhood, and home—particularly rural homes—in Washing-

ton. The teaching and demonstration of this department are conducted cooperatively with the U. S. department of agriculture, the plan in Washington being duplicated in every state. In Washington the extension service operates through the county agricultural agents, the home demonstration agents—field workers in home economics—the boys' and girls' clubs, the extension schools, the farm management and demonstration service, and correspondence courses.

Quite recently a new "general college extension" service was founded, which includes teaching other than agricultural. This department operates in four departments of non-agricultural extension teaching which are first, that of educational moving picture films and stereopticon slides; second, the department of correspondence courses, including American government and politics, journalism, vocational education, methods of teaching agriculture, "the high school", general psychology, scientific methods of study, social psychology, elementary algebra, shop mathematics, practical woodworking, second year French, college algebra and "the junior high school."

The engineering experiment station of the State College uses the services of nearly a score of engineering specialists, and is continuing, extending, and adding to work in engineering investigation which touches upon many different fields of applied engineering sciences.

Another line of engineering study involves experimental work on the fundamental principles underlying the design of carburetors; another, a mathematical analysis of the technical and economic relations involved in the prevention of loss by radiation from steam pipes. These, as are the other engineering "projects" now in hand at the State College, are deeply scientific, even though bearing upon problems of a most practical nature.

Other fields of engineering investigation are, the experimental development of certain refinements in

electrical measuring instruments; studies of road building materials of Washington; and the preparation of a popular bulletin on the use of hoists and tackle in the industries of Washington.

The engineering laboratories are equipped with standard instruments for checking a wide range of electrical measuring instruments and for chemical and physical tests of almost any industrial materials, including coal, timber, cement, and building materials of all sorts; and for physical, chemical and metallographic analyses and tests of metals, and for complete studies of road-building materials. Many engineering bulletins have been published as the result of the engineering studies made at the State College in the last two decades, and they relate to home and farm sanitation, water, electrical power developments, road building, drainage, irrigation, and practical uses of electricity.

CHAPTER XII.

State Institutions

Twelve Institutions Maintained By State—How Managed—Results Achieved—Rapid Growth—Brief Sketch of Origin and Progress.

The Board of Trustees of the State Reform School, Western Hospital for the Insane and State Soldiers' Home, and the Board of Directors of the State Penitentiary were abolished by the Legislature in March, 1897, and a State Board of Audit and Control created to replace them.

Again, in 1901 the Legislature changed the system of managing the State institutions and created a Board of Control having a complete jurisdiction over all state institutions which has functioned up to 1921.

In the new system established by the last legislature (1920-21) a department consisting of one director and assistants will henceforth direct, manage and control every one of the following named institutions:

Western State Hospital.	State School of Deaf.
Eastern State Hospital.	State School of Blind.
Northern State Hospital.	State Penitentiary.
State Custodial School.	State Training School.
State Soldiers' Home.	State School for Girls.
Washington Veterans Home.	State Reformatory.

Twenty years ago there were only six public institutions maintained by the state; now there are twelve.

In 1914 the value of all buildings under management of the Board of Control was $5,771,250; in 1921, $9,043,661.

In all these institutions farming is carried on, principally by the inmates, whereby a large percentage of the vegetables, meats, dairy and poultry products, as well as fruits, necessary for the various institutions, are produced.

Both the School for the Blind and School for Girls have been under women Superintendents for several years. In 1920, however, the School for Blind was placed in charge of a male superintendent. The Women's Industrial Home and Clinic was in charge of a woman up to the time of its closing by reason of governor's veto of appropriation.

Where women have been in charge they have been exceptionally successful.

It is deemed important in connection with the scope and purpose of this volume to give a short sketch of the origin and progress of each of these worthy and necessary institutions.

Western State Hospital

Wherever human beings exist individuals will be found who from one cause or another become bereft of their reasoning faculties and thereby become in conformity with the common instincts of humanity, entitled to the watchful care and custody of their fellows who suffer from no such affliction.

More than a century ago when this northwestern country was yet a wilderness almost untrodden by the foot of a white man, we read the story of an unfortunate trapper who lost his mind in the Rocky Mountains.

In 1803 an American fur trader was operating somewhere in the Rocky Mountains. One of his houses was attacked by Indians and all the occupants, except one man, were killed.

This man, wandering about through the hills and valleys of the desolate region suffering from exposure

and the loss of his companions, became demented. In this condition he was found by some Indians who took him to their camp and cared for him for years, always treating him with the greatest consideration, believing that he was, in some mysterious way, in closer touch with the unseen powers than normal people. In this condition he was found by some of the members of the John Jacob Astor Fur Co., in 1810, while on an expedition on the Columbia River. The man's name was Pelton. The Indians having no name for demented and thinking that "pelton" was descriptive of the man's condition, they adopted the word and it is now found in the Chinook dictionaries as signifying "crazy." They call a silly or foolish woman "pelton-clootchman." Other cases of insanity soon appeared in the territory and a contract was entered into with the Sisters of Charity, at Vancouver, to care for the insane at the rate of $8.00 per head per week.

In 1870 the legislature purchased old Fort Steilacoom for $850. Some time afterwards the land on which it was situated was granted to the Territory by Congress. In 1871 the Asylum was opened, and in 1887 the old structure was replaced by a new building.

The name was changed to "Western State Hospital" in 1915.

The institution is now composed of many large and imposing buildings surrounded by beautiful and well-kept grounds, and has in connection a highly improved farm. It is fully equipped to take care of the inmates in the most thorough and up-to-date manner.

The property is valued at $726,046.

Daily number of inmates, 1920, 1,344.

Eastern State Hospital for Insane

In January, 1888, the town of Medical Lake donated the land for the hospital site. The Legislature appropriated $60,000 for the building; and in 1902 a new

wing was built at a cost of $45,000 and an infirmary at a cost of $4,000. Since that time the buildings have been greatly enlarged and improved. The present daily number of inmates is 1,171.

The farm comprises a tract of 934 acres which furnishes a large part of the food supply for the inmates.

Northern State Hospital

This institution is beautifully located a little more than a mile north of the town of Sedro-Woolley close to the N. P. R. R. The buildings are on the cottage plan and are very attractive. A tract of about 1,056 acres of excellent logged-off land was purchased for the institution in 1909.

It is being rapidly cleared and put in cultivation principally by labor of the inmates. The daily number of inmates is now 876.

More buildings are needed to prevent overcrowding.

It is under first-class management.

State Custodial School

Until 1906, the feeble-minded, blind and deaf children of the state were taken care of at the School for Defective Youth, at Vancouver. They were then segregated and the feeble-minded given a separate school at Medical Lake called the "State Custodial School." The thinking people of the state long felt the injustice of neglecting those who were unable to care for themselves while making lavish expenditures for the education and welfare of those who suffered from no such disadvantage.

The school buildings have been rebuilt on the cottage plan and now have a capacity of 800. The present number of inmates is 594.

State Soldiers' Home, Orting

This institution for the old soldiers was built in 1890.

The property was then valued at $106,830. The members now number 240. The grounds are well kept and the atmosphere is as homelike as could be expected in an institution of that character.

Those of the members physically fit have to take part in cultivating the land and taking care of the crops.

The barracks building cost $91,000 and is one of the best in the State.

Washington Veterans' Home, Retsil

The Veterans' Home was built in 1907, on a tract of land comprising 75 acres. Veterans and their wives live here in cottages and apartments, and the widows of Veterans also have homes here.

Daily average number of inmates 459.

School for the Deaf, Vancouver

At an early date a school for the care of the deficient children was established at Vancouver where blind and deaf were cared for together with the infirm of all descriptions. The mentally deficient were removed to Medical Lake in 1906, when the State Custodial School was established there for the care of the feeble-minded, while the blind and deaf were still kept under one management.

In 1909 the School for the Deaf was established and ever since they have been kept by themselves.

The present number of pupils is 101.

The average cost per head for the deaf in the 64 institutions for that purpose in the U. S. is $390 per annum. Our school costs the State $290 per head per annum.

The silent or manual system of speech for the deaf and the oral speech method used in different parts of the world, after much controversy were merged into the American combined system. It is a most interesting sight to see the students singing a hymn by signs while the music is being played. The children help to farm and do gardening, but work done by them is voluntary. A regular graded system of school work is carried out, with extra emphasis placed on manual training and the arts and crafts that will make self-supporting citizens in spite of the handicap of not being able to hear.

School for Blind, Vancouver

In 1909 the blind were segregated from the deaf and domiciled in their own splendid buildings which will bear favorable comparison with similar institutions in older and wealthier states. All expenses incurred in the care and custody of the blind children of the State are met by the State, and a school for adults in the summer adds variety as well as usefulness to the institution. Various kinds of handicraft are taught here and some of the brooms made by the children are used by other institutions of the State. The record for good health among the blind children and the spirit of optimism prevailing among them are really wonderful and elicit the admiration of those who investigate conditions along these lines.

The music department is given special attention, as it may be an important factor in the life of the child. It is under the direction of H. P. Demming, a blind graduate of the Perkins Institute. At Easter time, 1920, the new organ was installed, to the great delight of the children. Francois Richter, of Portland, master organist, assisted by Margaret Carney, both blind, gave a grand concert.

Some of the graduates of the blind school are doing splendid work in behalf of their fellows, as for instance. Robt. Irwin, who after graduating from Harvard Uni-

versity, was called to Cleveland, Ohio, and made supervisor of classes for the blind in the high schools there. Others from our school for the blind have graduated from Universities and been an honor to the institutions. This is simply to show that blindness after all is not such a handicap as one might suppose.

All the blind ask is an opportunity to fit themselves for self support and usefulness.

The average daily attendance is 41.

State Penitentiary, Walla Walla

In 1883 a Territorial Commission was appointed for selecting a site for a Penitentiary. Prior to that time there were prisons of a kind in many of the counties and the Territorial legislature let a contract to a private company to build a penitentiary at what is now known as Bucoda, Thurston County, for the keep and employment of convicts, under the system commonly known as "farming out."

The contract system was continued for several years but was neither creditable to the Territory nor beneficial to the unfortunate inmates. Its abandonment meant progress.

Walla Walla having been selected as the most desirable location for a penitentiary, in 1886 the first building was erected there at a cost of $60,000. From time to time ever since improvements have been made and new buildings added until it has become a very large and imposing bastile.

The outside appearance is quite attractive and the grounds outside the walls and around the residence of the warden are beautifully kept. But through lack of sufficient funds the sanitary condition of the institution, not being modern, is not what it should be. Warden Drum did everything possible to make the institution up-to-date, but through lack of sufficient appropria-

tion his hands were tied. In his last report he says that owing to inadequate appropriation, he was unable to keep the inmates decently clothed and felt ashamed when visitors came to the place at the appearance of his wards in ragged raiment.

These conditions should be remedied, so that the state in this as in other matters should be in the vanguard of progress.

The Jute Mill, where the greater part of the inmates are kept employed, is 303 feet long by 174 feet wide.

The auditorium, or chapel, will seat 1,025. The present number of inmates is 608.

Up to 1914 there were 945 prisoners paroled under the indeterminate sentence act, 106 left the state, 31 returned, and 93 violated their parole and were returned.

100 prisoners have been committed to the insane asylum in the past 20 years. From 1901 to 1913, 15 suffered the death penalty for first degree murder.

The institution has cost the State to this date $2,149,189. The expenses are continually increasing.

In the 1918-19 report Warden Drum says: "It would be some encouragement to society to believe that the prisons were to some degree accomplishing their intended purpose. However, a very casual examination into the condition dispels any rising hope that such was the case.

"There is neither a promise nor a justified hope that the future generations will have less crime to contend with by reason of continuing our present non-effective methods of handling prisoners."

This grave summing-up of conditions by so competent and conscientious a citizen as Warden Drum should prompt our thinking people to take energetic action towards a better system—a system tending to the reform of the prisoners and lessening crime and safeguarding our threatened institutions by the continued increase of crime.

State Training School, Chehalis

The name of "Washington State Reform School" was changed in 1907 to that of "Washington State Training School." At that time the legislature passed the indeterminate sentence act, and established a system whereby the first consideration could be given to youthful criminals, or what might be termed incorrigible boys over whom their parents were powerless to exercise any control. These youthful delinquents being placed in an institution of this kind where strict discipline is maintained and attractive work of a beneficial nature both to the inmate and the institution provided, naturally leads to a gradual development of the better qualities of their natures and inspires them with a desire to abandon their wayward habits and become useful and law-abiding citizens. The advantages of acquiring a good education are also afforded these boys which they seem to appreciate, judging by the number who have graduated every year from the eighth grade.

A high school department had also been inaugurated with a membership of 40 boys.

This school has an excellent band which is a source of pride and pleasure to the institution.

Shop-line industries are taught here as well as farming and gardening by practical methods.

The average number of inmates in daily attendance is 237.

State School for Girls, Grand Mound

This school was opened in 1913 for the care and custody of girls who have wandered from the straight and narrow path in order that they may be reclaimed from their vicious tendencies and be transformed into useful and creditable members of society. The present number of inmates is 107.

The girls do their own farming with the exception of plowing; cut their own wood; raise their own garden stuff, sew, crochet and attend school half a day. The special courses given fit the girls for vocations they desire to follow after leaving the institution.

The girls have concerts and musicales and all sorts of wholesome fun and the morale of the institution is said to be excellent. The intention of the founders was to have a separate room for each girl, but owing to the lack of space this has not been carried out. However, the girls are not crowded and life is as homelike as it can be made.

State Reformatory, Monroe

This institution is in all respects very similar to the Penitentiary as to management and discipline. It was designed for the incarceration of youthful and first-offending criminals, so that they might not have to mix and associate with the older and more hardened offenders confined in the Penitentiary. Lack of funds has been felt as keenly here as at some of the other state institutions.

There is an extensive farm in connection with the institution, of which 115 acres are now intensively cultivated. More than half the subsistence for the entire populations, both officers and inmates, is now taker from the land.

Women's Industrial Home and Clinic, Medical Lake

In 1920 a group of buildings formerly occupied by the Custodial School was refitted and remodeled to accommodate 68 women.

This institution was established by enactment of the legislature of 1919, and opened for commitments on Sept. 1st, 1920. There is a garden and fifteen acres in berries belonging to the home.

While the home is just in its infancy it has already given promise of being a very useful addition to the other progressive institutions of our State.

CHAPTER XIII.

The Camp Fire Girls

Organization Perfected—Its Policies and Principles—Purposes —New in Washington—Rapid Growth—In Summer Camps —Program For Day—Blue Birds—Nestlings—Costumes— Now In Infancy—Bright Future.

The Organization of the Camp Fire Girls, National in its scope, was first perfected in New York City with Prof. Luther Gulick as its head, in 1910. From that time it has spread throughout the country.

It is similar to the Boy Scouts, adapted to the needs of girls of all ages, non-sectarian in its principles and strictly not a "class" organization.

It appeals to all wholesome-minded girls, regardless of financial station in life. All honors are awarded strictly upon individual merit.

It gives the girls a much-needed opportunity of a few weeks of life outdoors in camps, coupled with instruction, which makes the camp life of inspirational value to the girl. There, in bloomers and blouse, she may be natural, creative and free.

Purpose No. 1.

To make our future women better American citizens.

Methods of Accomplishment

1. Teaching the fundamentals of the United States Constitution and the general principles underlying our form of government.

2. Teaching the value of co-operation and stimulating its practice.

3. Inculcating a sense of true Democracy.

4. Cultivating the habit of thrift and encouraging the spirit of self-support.

5. Instilling in the individual girl a sense of responsibility toward society and the need for unselfishness and service to others.

PURPOSE NO. 2.

To inculcate in girls a love for the out-of-doors, with its sequence of mental and physical vigor.

METHODS OF ACCOMPLISHMENT

1. Knowledge of nature lore and camp craft.

2. Participation in outdoor sports (hiking, swimming and games).

PURPOSE NO. 3.

To improve the quality of American home life.

METHODS OF ACCOMPLISHMENT

1. Stimulating a love for good housekeeping, cooking, sewing and care of little children through a system of awards to those who excel.

2. Teaching them the value of beauty in home surroundings.

3. Instruction in sanitation and personal hygiene.

The Camp Fire Girls were organized in Seattle, Wash., July, 1919, with less than a hundred members and grew so rapidly that in 1920 the membership had increased to 1,000. April 1, 1921, shows a registration of 1,725 members with 115 groups each having an older girl or woman for leader.

The Office was established Oct. 16, 1920, which is the general meeting place of the girls and their guardians. The fact that 2,500 visitors registered at the office between Oct. 16, 1920, and April, 1921, shows the interest the movement has drawn about itself.

Classes are held in First Aid and all useful hand crafts, and new groups are constantly being organized.

In 1920 the summer camp on Blake Island during ten weeks operation gave outings to 650 girls in relays of about 130 every two weeks.

The total cost of building, equipment and maintenance of the Camp was $8,776.95. The total donations received amounted to $3,103.50, leaving a balance of $5,673.45 to be raised by the girls themselves.

This was met by funds earned through a vaudeville entertainment staged by Camp Fire girls, sales of candy and other commodities, supplemented by board of 85 cents a day paid by the girl campers. Careful management made possible the payment of all expenses and a net balance of $456.54 now on hand.

The program for the day in summer camps varies according to the weather and the specific needs of the girls. The following sketch will be found interesting. It is the program of the Seattle Camp Fire Girls in their camp, 1920.

6:40—Rising bugle.
6:45—Morning dip.
7:20—Setting up.
7:40—Non-sectarian morning "sing" and the Lord's Prayer.
8:00—Breakfast.
9:00—Clean up tents.
9:30—Games (basket ball, base ball, hiking, rowing, each group under a teacher specially trained for that particular line of instruction).
10:30—Folk dancing, interpretive dancing, basketry and pottery.

11:30 to 12:30 free.
12:30—Dinner.
1 to 2—Quiet hour.
2 to 3—Ceremonial gown decoration and count book.
3 to 4—Free.
5:00—Campfire songs.
6:00—Supper.

The quiet hour is observed in napping and there is no talking after taps at 9:30. Every evening the girls arrange a different social program. Probably the most inspiring sight of all is to see a crowd of these young women, with their faces turned toward the setting sun, singing the last verse of "Nearer my God to Thee", followed by taps.

To Miss Mary Hughes, Mrs. Ann Simmons, Miss Clifford Kent, Miss Myra Snow and Miss Blanche Smith should be tendered a grateful appreciation for the pioneering they did, as well as to Miss Ruth A. Brown, the Executive Secretary of the Camp Fire Girls in the Puget Sound country.

The Blue Birds are the girls too young to become Camp Fire Girls. The organization is the younger sister of the Camp Fire Girls and fills a long felt need in the entertainment of the younger girls in an instructive manner.

The Blue Birds are all under twelve years. Their Motto is "Blue Birds Sing, Blue Birds Help, Blue Birds Grow." Their Watchword is, "Si-He-Gro," a word having an Indian sound, but simply made up of the first parts of the words Sing, Help, and Grow. A group is called a "Nest" and the girls beginning as "Nestlings," progress to "Fledglings" and then to "Flyers."

A simple little dress of grey galatea, with feathers of blue and brown and greyish-white, added as they sing and help and grow, is their effective costume. The Fledglings wear a little blue cap. The Flyers, a

pair of wings. The Honorable Maurice Maeterlinck, who originated the Blue Bird for Happiness, is the Honorary Vice-President of the Camp Fire Girls and Blue Birds.

Any guardian of a Camp Fire group may start a nest and its activities will depend entirely upon the ideas of the trained guardian.

The Blue Birds have a simple, effective little ceremony and each Bird has a symbol which she works out with her guardian. It is just as important to her and stands for just as much in her little heart as the Square and Compass do to the Mason.

While the Seattle Camp Fire Girls lead the Northwest in numbers and activities, there are many flourishing groups in all parts of the State. Everett, Tacoma and North Yakima are particularly active.

The Camp Fire Girls have just secured the location for a permanent summer camp on Vashon Island, Washington.

The property, a heavily wooded strip of waterfront containing 158 acres, boasts of a good dock, five springs and a splendid bathing beach. Besides the 17 houses, 14 of which have fire-places, Sec. Ruth Brown is on the ground with 20 carpenters, building several dozen tents for the opening of the summer camp.

The ceremonies of the Camp Fire Girls are very beautiful, dignified and inspirational.

The Camp Fire Girl, having served her time faithfully, becomes a Woodgatherer and thereby promises:

"I will strive to grow strong like the pine tree,
To be pure in my deepest desire;
To be true to the truth that is in me
And follow the Law of the Fire."

After attainments involving months of work she may become a Fire Maker. This is the desire of the Fire Makers:

"As fuel is brought to the fire
So I purpose to bring—
  My strength,
  My ambition,
  My Heart's desire
  My Joy, and
  My sorrow
To the fire of Human-kind;
For I will tend as my fathers have tended
And my father's father
Since time began
That fire which is called
  The Love of Man for Man,
  The Love of Man for God."

A girl may become a "Torch Bearer" after she has shown the real powers of Craftsmanship and worked her way painstakingly into the order.

The Torch Bearer's Desire is:

"The Light that has been given to me I desire to pass
  Undimmed to others."

The organization is just in its infancy. It bids fair to attain a glorious maturity!

CHAPTER XIV.

The Boy Scouts

In reviewing the many progressive movements of our day, one of the most important, in our estimation, is that of the "Boy Scouts" of America. Its aims and purposes undoubtedly tend towards the betterment of the physical and moral condition of the young men of this as well as of succeeding generations. And what can be of more importance than that.

It seems necessary in touching upon the subject of the "Boy Scouts" to disabuse the erroneous idea entertained by a great many people that the Boy Scout movement is of a quasi-military character. This impression no doubt has arisen from the boys having to undergo a certain amount of disciplinary training and don a uniform of military cut. But that is as far as it goes in assuming a military character. Its instructors do not advocate or extol the profession of bearing arms. On the contrary pains are taken to inculcate the principle that to become a useful member of society the boy must become proficient in the arts of civil life so that he can not only advance his own interests but at the same time be a benefactor of society. This is deemed a much more honorable pursuit than fitting oneself to scientifically slay his fellowman. Why, the opposition to militarism is so strong that the practice of giving military instruction in the schools is disapproved.

Notwithstanding the emphatic opposition of the organization towards imbuing the minds of the youth of the nation with the military spirit, yet should the dire necessity arise when young men would be called upon to take up arms in defence of their country, or in any just conflict, it is unquestionably true that

those who have undergone the boy scout training will be better equipped to fill the requirements of the military service than those who have not had that advantage.

The Boy Scout movement had its origin during the Boer War. In that memorable conflict there were many displays of gallantry and grit by both the contending forces, not the least of which was the remarkable defence of Mafeking by a small number of British soldiers under General Baden-Powell, against a superior number of besieging Boers. During that protracted and terrible siege, the British force was reduced to the direst extremities. The incessant duties of the soldiers in defending the town were so arduous that Baden-Powell was constrained to call for help from the boys of the town. They responded with alacrity.

Many of the duties which the soldiers had been performing, such as carrying water and fuel and bearing messages were assumed by the boys and performed in a very satisfactory manner, leaving the soldiers free to give their undivided attention to repelling the attacks of the enemy. The usefulness of the boys in this emergency, when brought under proper management, so impressed Baden-Powell with the possibilities to be attained by a large number of boys ranging from twelve to fifteen years, that, at the close of the war, he resigned his commission, and took up the work of organizing the boys of Great Britain on a large scale.

That war, also, developed the fact that the British "Tommy", being recruited in great part from the denizens of the big cities, was perfectly helpless to take proper care of himself when thrown upon his own resources in a sparsely settled and frontier region. This incapacity greatly impeded successful military movements and prolonged the war.

All these considerations influenced Baden-Powell in taking up the work of organizing Boy Scouts, so that

the future young men of the nation might become more resourceful and conversant with all the requirements of an active outdoor life. He is still at the head of the movement in Great Britain.

In 1910, through the efforts of a wealthy Chicago man named Bryce, the Boy Scout movement was introduced into the United States. Here, although resembling the parent organization in Britain, it has become Americanized and improved like everything adopted from the British Isles. Money in liberal amount was donated to pay the necessary office help and headquarters established in Washington, D. C., with Colin M. Livingstone as executive head of scouts and James E. West executive secretary, who still holds that position.

In May, 1911, through the efforts of Josiah Collins, the Boys Scouts movement was organized in Seattle and Major E. S. Ingraham was appointed first Secretary, which position he held continuously for seven years, part of the time without any salary and the remainder with only a mere pittance. Still he devoted himself heart and soul to the work, because he was a firm believer in the great good that would be accomplished by the growth of the organization in the state. It is now fulfilling his fondest hopes, although, officially, he is not, at the present time, connected with the organization.

The Park Board and Rotary Club, in addition to some public-spirited citizens have contributed towards defraying the necessary expenses of the headquarters. The scoutmasters give their time gratis.

There are now upwards of 1200 members in Seattle and some 5000 in the State.

The Seattle scouts have a permanent camp of 160 acres at Jackson Cove, on the west side of Hood's Canal and at the base of the Olympic mountains. It is beautifully located and well fitted up and the boys spend a delightful time there during the summer months.

There are camps with paid executives at Spokane, Tacoma, Bellingham and Everett and other towns in the State are now preparing to have camps established.

There are upwards of half a million boy scouts now in the U. S. and increasing rapidly in numbers. During the war they proved themselves very efficient in contributory work, aiding the Red Cross, selling bonds, etc. More than a million dollars worth of liberty bonds were sold by the boys. They seemed to be able to reach people that no other agency could approach. Their intelligent and conscientious work during that trying period has elicited the highest praise from representative men in every walk of life in the nation.

Theodore Roosevelt was so impressed by the great good that he foresaw the scout movement was destined to accomplish, that, had he lived, he would have been tendered, and in all probability would have accepted the leadership of the movement. His premature death prevented the fruition of this desirable consummation. But the movement has got the inherent qualities within itself to move forward alone without the aid of any commanding personality, however desirable such a stimulus might be.

A flood of light is thrown upon the aims and purposes of the Boy Scout movement by perusing the oath taken by the boy when he enters the ranks. Here it is:

"On my honor I will do my best—

"1. To do my duty to God and my country and obey the Scout laws;

"2. To help other people at all times;

"3. To keep myself physically strong, mentally awake and morally straight."

Character development is the real objective of the Boy Scout movement.

Scoutcraft includes: Instruction in First Aid, Life Saving, Tracking, Signaling, Cycling, Nature Study,

Seamanship, Campcraft, Woodcraft, Chivalry and all of the handicrafts.

A knowledge of these things makes the boy both efficient and self-reliant. His initiative gives him the power to overcome all ordinary obstacles encountered in outdoor life. His self-assurance compels success. The obligation that binds him to do at least one good turn daily is worthy of commendation. He must be so helpful as at all times to be prepared to save life and help injured persons.

He is courteous, friendly and kind, even to dumb brutes and hurts no living creature needlessly. In addition to these he is taught the benefit of being thrifty; and in order to advance in the organization he must have a small deposit of at least a dollar or two in a Savings Bank, of money earned by himself.

These are a few of the things inculcated and practised in scoutcraft, and who can say that they are not essential in the development of a manly character. All praise to the Boy Scouts! May they multiply and prosper.

CHAPTER XV.

The American Red Cross

"The Greatest Mother"—Relieved Sufferers In All Lands—Organized Through Efforts One Woman—Purposes—Emblem of Order—Splendid Work in Spanish American War—Gradual Growth—Real Powerful Achievements—World War Opened Large Field—Headquarters Northwestern Division—Rapid Increase of Membership—Activities In War Time—Home Service—In Behalf of Ex-Service Men—Junior Red Cross—Its Duties.

No story of progress in the United States during the past seventy years would be complete without an account of the humanitarian achievements of our people through the American Red Cross. Composed of persons of all races, creeds and conditions, this great organization has been given another name which symbolizes the affection in which it is held—it is called "The Greatest Mother." Through the Red Cross the heart of the nation has been revealed to millions of sufferers from war, disaster and pestilence in this country and throughout the world.

It was largely as the result of the efforts of one woman that the American Red Cross was organized. During the Civil War, Clara Barton witnessed the pitiful condition of a train-load of wounded soldiers. From that day until the close of the war she devoted her time and energies to administering to the needs of sick and wounded men. Behind the battle-lines, amid the dirt and disease which were everywhere, she was an angel of mercy to wounded and dying soldiers of North and South alike.

After the war, Miss Barton went to Europe for a rest. There she became acquainted with the Red Cross which had been organized in the countries signing the

famous "Red Cross Treaty" in Geneva, in 1864. She observed the splendid work accomplished under the Red Cross flag for wounded soldiers on both sides in the Franco-Prussian war of 1870. With "Humanity and Neutrality" as their watchword these organizations made no distinction in their service to wounded men on account of nationality. She returned to America, determined to work for the establishment of a similar organization in this country. Her efforts were crowned with success. The American Red Cross was organized in 1881, with Clara Barton as its first president; and in 1882 the United States signed the Geneva Treaty.

In the constitution of the society, adopted in 1881, it was declared the purpose of the organization "to organize a system of national relief and apply the same in mitigating the sufferings caused by war, pestilence, famine and other calamities." The association also pledged itself to "hold itself in readiness in the event of war or any calamity great enough to be considered national, to inaugurate such practical measures, in mitigation of the suffering and for the protection and relief of sick and wounded, as may be consistent with the object of the association."

If there was any doubt regarding the need and value of such an organization as the American Red Cross, this doubt was soon dispelled. Fortunately it was many years after the formation of the society before men wounded in battle needed its services. But there are other forces as destructive as war. Scarcely had the constitution of the society been adopted when there came news of disastrous forest fires in Michigan causing widespread death and destruction. "Our relief rooms were instantly secured," reads the report of this first relief activity of the American Red Cross, "and our white banner, with its bright scarlet cross, which has never been furled since that hour, was thrown to the breeze, telling to every onlooker what we were there to do, and pointing to every generous heart an outlet for its sympathy."

This disaster, in which the American Red Cross met its first test, was followed by many others in the succeeding years. Floods in the Mississippi and Ohio valleys, cyclones in all parts of the tornado belt, yellow fever in southern states, the Johnstown flood, hurricanes at sea, disastrous fires in many cities, epidemics of disease, the San Francisco earthquake, and scores of other calamities wrought destruction of property and caused death and destitution. Always, when local funds and initiative were not sufficient to cope with these emergencies, the people turned to the Red Cross with the assurance that thorough and constructive assistance would be immediately forthcoming.

Meanwhile, during the Spanish-American War, the American Red Cross gained experience in war-time relief work which was of value twenty years later when this nation entered the great world conflict. The Red Cross flag was seen in army camps, on the high seas, and in Cuba, Porto Rico and the Philippines. Women all over the country responded to the call and produced thousands of articles, which contributed mightily to the comfort and welfare of men in camps and especially in hospitals. Supplementing the medical department of the army, the Red Cross furnished hospital supplies and sterilized water, and in every possible manner contributed to the well-being of the soldiers and sailors.

In Washington (State), the Red Cross was organized in many communities, for the special purpose of caring for Washington soldiers and their families. In Seattle, Tacoma, Walla Walla, Spokane, Bellingham and perhaps in other cities Red Cross organizations were formed. While there is no report of the amount of work accomplished in the state, it is certain that Washington soldiers were greatly benefited by the activities of the loyal women who worked so faithfully. Furthermore, the basis was well laid for Red Cross activities in later years.

Space does not permit an account of the relief extended to sufferers in foreign lands—especially in Armenia and Russia—by the American Red Cross. It is sufficient to state that people stricken by sword or by famine found in the ministrations of Red Cross workers evidence that the people of America were responsive to suffering in other lands.

In 1905 the American Red Cross was incorporated and made a truly national institution, with the President of the United States as its president and the War Department as its auditor. Its authority, therefore, rests upon an act of Congress, and is the officially recognized public relief organization of the nation with broad powers to serve suffering humanity both in war and in time of peace.

This, in brief, is the history of the American Red Cross before the outbreak of the World War in 1914. It is a history of gradual growth and increasing activities, and especially of accumulating experience for the supreme test which followed the United States' declaration of war in April, 1917. Before this date the organization "pursued a helpful but on the whole rather a pacific and uneventful course." Its real power for achievement has been demonstrateed since that date.

The story of what the American people accomplished through the Red Cross during the war would fill volumes. A brief account of the principal activities in the state of Washington and in the Pacific Northwest, however, will be typical of what occurred all over the country.

Very early in the war it was recognized that it would be impossible to direct the operations of the Red Cross effectively from a single headquarters in Washington, D. C. Accordingly, fourteen Divisions were created—thirteen in continental United States and one to have supervision of American Red Cross Chapters in our insular possessions and in foreign lands. One of these Divisions was the Northwestern, com-

posed of Washington, Oregon, Idaho and Alaska, with headquarters in Seattle.

Similarly an active campaign was inaugurated for the establishment of Red Cross Chapters including every community—for the local Chapter is the basis of the Red Cross organization. By June 30, 1918, there were 35 Chapters in Washington, 24 in Oregon, 39 in Idaho, and 15 in Alaska. These Chapters varied in size from a single city with the immediately surrounding country to an area composing six or seven counties. Each Chapter, in turn, had Branches in towns within their jurisdiction; and there were still smaller groups known as Auxiliaries. In Washington, for instance, on December 31, 1918, there were 401 Branches.

Comparatively few people in the Northwest were members of the Red Cross before the war, but in the first Roll Call in December, 1917, a total of 690,270 in the Northwestern Division enrolled as members, 335,367 of whom were citizens of Washington. One year later this number had increased to 814,912, with 430,008 in the state of Washington. Thus through Chapters, Branches, and Auxiliaries, acting under the direction and supervision of the Division Office, thousands of people gave of their money and, more important, of their time and strength, in order that this section of the country might do its full share of the great work entrusted to the American Red Cross.

The care of the millions of men in our army and navy, especially when they were in hospitals because of wounds or sickness, and of their families while they were absent in the service of the nation, was the first task of the Red Cross. To this end the new machinery of the organization was set in motion with surprising rapidity and with results that faithfully reflect the determination of the American people that the war should be won. A few figures will illustrate the volume of work accomplished.

During the year 1918 the women of the Northwest, working at Red Cross workrooms and in their homes, produced articles valued at more than $3,000,000. The total number of articles for the last six months of this same year was 3,316,000. Of these 2,161,238 were surgical dressings, 330,322 were hospital garments, 376,119 were miscellaneous hospital supplies, and 349,978 were knitted articles. In addition 98,343 refugee garments were produced for the people of Europe. During the same year the 275,000 children who were enrolled in the Junior Red Cross contributed $66,370.70, and produced thousands of articles for soldiers and sailors and children overseas.

Red Cross Canteens, operated by Chapters and located at the principal railroad stations in Washington, Oregon and Idaho, served 146,426 soldiers, 27,639 sailors, 4,026 marines and 34,673 dependants during the last six months of 1918—thus bringing to these men continuous evidence of the solicitude of the people for whom they were offering their lives. The number of men served in this manner increased enormously after the signing of the Armistice when the men were being demobilized. In January, 1919, for instance, 104,111 men were supplied with 2,528 gallons of coffee, 21,327 sandwiches, 3,220 dozen doughnuts, 4,820 cookies, 98,651 packages of cigarettes, 8,669 chocolate bars, 1,974 pounds of candy, 40,658 postal cards, 75,102 magazines, and thousands of other articles.

At Camp Lewis, Vancouver Barracks, the Puget Sound Navy Yard, and all the forts and posts where men were in training, the Red Cross maintained offices and representatives to assist the army and navy in maintaining the efficiency and morale of the men in service. In the army hospitals Red Cross workers visited the men in the wards, wrote letters for them, ran errands for them, and supplemented the treatment provided by the hospital authorities by giving the men numerous Red Cross gifts which administered greatly toward their comfort and contentment. From the warehouses sweat-

ers, socks, helmets and numerous other articles were distributed to the men, especially when they were about to entrain for other camps in this country and overseas. Emergency loan funds were also available to men called home by death or illness in their families or by urgent business situations.

Important as were all these activities affecting the physical well-being of the men in service, they were certainly no more fully appreciated than was that phase of Red Cross work which was given the name "Home Service." Upon each Red Cross Chapter was placed the duty of aiding and protecting the families of the service men living within their jurisdictions. In all the army and navy camps and posts there were Red Cross representatives whose duty it was to keep in touch with the men and be prepared to assist them in solving problems arising out of their absence from civilian life. Thus, if the service man was worried about affairs at home the Red Cross camp service worker could immediately communicate with the local Chapter and aid would be given to the family or assistance rendered in adjusting some business difficulty. On the other hand, if the family was worried about the welfare of the men in service, the Chapter workers could communicate with the representative in the camp and the man would be visited and a report of his welfare returned to the Chapter. In this way the Red Cross helped greatly in maintaining the morale of both the fighting forces and the civilian population.

The extent of this service is indicated by the fact that in one month, namely April, 1919, the number of service men's families to whom service was rendered by Red Cross Chapters in Washington alone was 18,094, while the financial assistance given these same families amounted to more than $46,000. In addition thousands of discharged soldiers and sailors were aided each month in filing papers connected with their government insurance, allotments, compensation, travel pay and other claims arising out of their war service. Special empha-

sis has been placed, and is still being placed, upon service to the men disabled during the war.

Another responsibility placed upon the Red Cross during the war was the recruiting of nurses for the army and navy. In the Northwestern Division between November 1, 1917, and December 31, 1918, 616 nurses were thus recruited and assigned to service. The story of the part played by the Red Cross Nurse during the World War has been told in song and has been imperishably recorded in the annals of the great struggle.

This resume indicates only very imperfectly the outstanding activities of the American Red Cross in the Northwest during the war and the period of demobilization. No mention has been made of other vital phases of the work, such as motor corps service, the furnishing of nurses and supplies during the influenza epidemic, relief in cases of disaster like the Cle Elum fire, and the many activities of the Junior Red Cross in addition to the production of articles. Above all, no words are adequate to describe the sacrifices, in money, in time and in strength, made by hundreds of thousands of men, women and children in order that their Red Cross in the Northwest might not fail the nation in its time of need.

Although the war closed nearly three years ago the American Red Cross will "carry on" in behalf of ex-service men as long as there is need for its services. Especially will it fulfill its sacred pledge to stand by the men disabled in the service of their country. In the United States Public Health Service Hospitals at Tacoma, Port Townsend and Boise, the Red Cross maintains staffs of workers. Similarly all the Red Cross Chapters in Washington and the Northwest are continuing their services to former soldiers and sailors and their families with the same zeal they exhibited during the war.

At the same time the Red Cross is laying the foundation for an enlarged program of service. It was

universally felt at the close of the war that this organization should not again be allowed to return to its pre-war basis. The mission of the Red Cross in times of peace is believed to be no less vital than in war.

Consequently throughout the Northwest the Red Cross Chapters are undertaking new fields of service to their communities. Viewing preventable disease as a public calamity, the Red Cross has entered the field of public health. Health centers are being established, county public health nurses are being employed by Chapters, and women and girls are being instructed in the principles of home hygiene and the care of the sick. Social service similar to that rendered to soldiers and their families during the war is being extended to all disadvantaged families. Through the Junior Red Cross the children in the schools are learning lessons of citizenship through unselfish service to others. Preparedness to meet disasters, the teaching of first aid and life-saving, and the operation of salvage shops, are other activities in which Chapters are engaging.

Thus, with organizations in every community, the American Red Cross is one of the important means through which people are striving to make life in America healthier, safer and happier.

CHAPTER XVI.

The Knights of Columbus

By Laura Wood Hughes

Why Organized—Chief Activities—Official Recognition—Columbus Day—Self-Sacrificing Labors "Overseas"—Brought Comfort to Thousands—Ministering to Wounded—Operated Largest Doughnut Factory—First Relief Workers to Cross Rhine—Minstrel Shows Appreciated—Free Instruction for War Veterans—School and Club House in Seattle.

Michael Joseph McGivney, priest of the diocese of Hartford, Conn., dreamed the dream that became the Knights of Columbus, and great was the need of such an organization. The rush of Irish Immigrants from their own country, was met with disapproval and suspicion by Protestants and Catholics alike. It was Father McGivney's ambition to weld together a body of men with high ideals who would slowly break down the religious prejudice by living benevolent lives of service to humanity.

In 1882 the charter of the Knights of Columbus was formally issued and the fraternal order became incorporated nationally.

In 1885 the order was carried into Rhode Island. Its quiet, steady growth continued until, at the end of 1899, the order was active in 20 states—the foremost Catholic fraternity and benevolent society in America.

In January, 1919, the number of insured members was 128,935. The Mortuary Reserve Fund and Death Benefit aggregated $8,740,276.15.

Until the commencement of the war, the chief activities of the Knights were promoting higher education, endowments of beds in hospitals and a keen participation in furthering any and all movements consistent with good citizenship and high ideals. During the war along the Mexican border and with Manila, the Knights contributed $10,000 to the relief fund and $20,000 was contributed for the relief of the sufferers of the Middle West during the floods of 1913.

In 1912 the Knights of Columbus won a long sought and much deserved recognition when Columbus Day was officially set aside by legislative enactment and made a day upon which the Nation could co-operate in honoring the man who set forth, with the fear of God in his heart, to find the New World. The Knights participated in the celebration of unveiling the Statue of Columbus in Washington, D. C., with a generous donation of funds and the old discoverer was at last put upon an equal memorial footing with our fearless history makers.

Not so much in statistical, tabulated form or in publicity sheets has the War Work of the Knights of Columbus been printed, but in the hearts of men who will ever associate the elderly, fatherly Knights "Over Seas" with self sacrifice and brotherly love. By a thousand tales, each different, each dripping with its agony and heroism, the weight of the human value of the Knights of Columbus at the Front might be measured. It is the story of "Man's Humanity to Man." It is the story of "Uncle Jo" Kernan, over sixty years, carrying his heavy pack of chocolates and smokes and chewing gum to the boys in the trenches. It is the story of "Pop" Bundshie, trundeling his kitchen over the shell-swept road to some secluded spot where he could administer comforts to his boys. It is the story of the brave "Yank" who, when all other means failed, hesitated not at all to risk his life to drop from his air craft into the cut-off trenches, the "goodies" wrapped in paper and marked "K. C." It is the story of gifts

of little comforts for our lads, of personal service without benefit of remuneration, save the undying gratitude of 550,000 men who enjoyed the hospitality of the Knights of Columbus, some time during service.

The reason, the emotion, the traditions of men called for religion in this time of the world's greatest conflict. The Catholic lad died unhappy without the last rites of his faith, and the non-catholic, as earnestly longed for a kindly smile, the touch of a hand and a word about the future life he was being hurried into. At Toul there were six hospitals and 20,000 wounded and dying men with their quota of Catholic lads, and but one chaplain. No Protestant soldier accused a Knight of obtruding his religion upon him, for he too was served with faith and love. All loved the "Fighting Shepherds of the Fighting Flocks."

One day Sec. Thomas, carrying his heavy pack of "goodies" to be distributed to the boys in the first and second line trenches, came upon a lad lying in a ditch, wounded unto death. He was begging for a chaplain. None was nearer than Baccart, seven miles away. Sec. Thomas hastened to Baccart and returned with the chaplain before the lad became unconscious. This incident led the chaplain to telegraph to New York for motorcycles for the use of the K. of C. secretaries and as soon as the factories could turn them out, hundreds were shipped to France.

Fifty-four volunteer chaplains were supported in France by the Knights. They had 250 huts, overseas, ranging from some poor deserted peasant's home to a palace along the Rhine, which were used as clubhouses.

In the hospitals the Knights distinguished themselves by carrying the helpless, giving anesthetics for hours at a time, shaving, writing letters, reading for those who had no eyes, lighting cigarettes for those who had no fingers, and above all never missing a chance of slipping in a song and dance or anything that would brighten the down-and-out fellow. The boys in the hospitals

came to watch for the Knights as they would have watched for a dear Uncle or Father. A piece of soap was the most imperious of bribes and no one who was not at the front during the last year of the war can realize how precious an ounce of sugar or a piece of chocolate was. Once, when undergoing an operation without anaesthetic, Warden McLaughlin tells how a poor lad braced up and smiled and went through the ordeal because a Knight came along and put a chocolate drop in his mouth and did a skit that made the boy laugh and take heart.

The Knights can modestly claim to have operated the largest doughnut factory in the world. It was started by the "Doughnut Kings," Knights Gramling and Cavanaugh. Their bi-weekly "doughnut barrage", with a daily output of 60,000, increased at this time, will ever be a dear memory to the boys. The doughnut spoke of "Mother" and of "Home" in that devastated country, as nothing else did. It was the symbol of hospitality, a tiny oasis in that desert of brown bread and coarse chow.

During the period of the war, the thousands of Knights who were in service were carried as ordinary risks, the order assuming the entire war risk. In Boston, a hostelry, providing 703 free beds, baths, shine, shave, and breakfast, was the first of many of its kind on both sides of the water. To every man embarking on a transport from France, the Knights gave gifts of candy, "smokes", handkerchiefs and shaving sets.

At the signing of the armistice, the first relief workers to get into Germany were Secretaries James Fitzpatrick, M. Nolan and Thomas Roche, who crossed the Rhine with tons of supplies. Everybody seemed to co-operate with them and in a short time, clubs were opened and used by thousands of men. Shower baths were provided with soap for all, reading rooms opened, athletic games and all forms of entertainment possible,

that would make the soldiers better contented during the period of waiting. Wholesome living conditions were also provided.

This story would not be complete without mention of the great Minstrel Show and the Fair and what the doughboy termed "piece de resistance" of the last year of the war—the Great Circus. The Minstrel Show toured the country, stopping at every occupied town. The Fair was a great success in so far as it occupied happily, the time of thousands of homesick men for days and days and the Circus with its great company of performers going about from place to place, was one of the greatest factors in the contentment of the lives of the soldiers. As the Circus passed on, from Bordeau to Coblenz, more than half a million men, high officials and privates, side by side with their feet in the sawdust, munching peanuts and popcorn, witnessed the big event.

As the boys began to arrive home, free receptions were arranged by the Knights, in which such acquisitions as the famous Lemonade Wagons, free beds, intelligence bureaus and all sorts of benefits, were tendered. In the State of Washington, at Camp Lewis, the Knights have three permanent buildings. There are a number of beds endowed in different hospitals by them, and their relief fund, which is outside of their regular sick beneficiary, is amazingly large.

The Knights of Columbus, with James J. Gorman as their Grand Knight, came to the Pacific Coast in 1902. In Seattle is to be found one of their most beautiful club buildings. It is a four-story, modern brick structure on Harvard Avenue.

The building was opened in 1913. Here are held the juvenile and adult classes in physical instruction, under trained men; business men's classes and ladies' classes.

The second floor is taken up entirely with the ball room. The third floor is given over to the Club and library. On the fourth floor the lodge rooms are located. During the war, 60 cots were put up here for the free use of soldiers and sailors and they were always occupied.

The Knights of Columbus school, under Mr. Gorman, is progressing in the old Seattle College building, on Broadway.

The recent membership of the Knights of Columbus in Seattle alone is over 2,000. At this writing (1921) Ralph A. Gemmil is the Grand Knight.

CHAPTER XVII.

The Salvation Army

"A man may be down but never out."

Purpose of Organization—Humble Beginning—Established in U. S.—Rapid Progress—Statistics of Army—Organized in Washington—Active in Uplift Work—To the Rescue in Distress—Splendid Work in Great War—Gratitude of "Our Boys"—Increasing Popularity—Usefulness Generally Recognized.

"Give the hungry man some food," said Gen. Booth, "and then he will listen to your message." It was this conviction in the heart of William Booth, a poor preacher of London, that led him to plead with his Conference to be permitted to hold open-air meetings in the streets of London for the "Submerged Tenth", as he called them. At the close of the Conference, the presiding Minister arose and demanded that Booth tender his resignation or give up the "undignified" practice of preaching in the streets.

For one undecided moment he stood with bowed head. It took great courage to withdraw from a church in which he had labored for years. But as he stood, his young wife, Catherine, arose and in clear, unafraid tones, cried out, "Do not do it, William, do not give up our poor people,"—and he did not! Courageous Woman!

Immediately Booth organized the first Christian Mission where hundreds of the "scum" of London came who never before had been inside a place of worship. In 1879 the Mission was organized on a quasi-military basis, adopting the name of "Salvation Army," with Gen. Wm. Booth as its head. The local societies were

called "Corps" and the evangelists, "Field Officers." Bands were organized with their bass-drums stimulating to "Forward March," and the first War Cry was published.

In 1880 a little company of Army Officers landed in the U. S. and then began a struggle for recognition which called for unlimited patience and tact. Against frightful odds, mud-slinging, and in some places "rotten-egging", they slowly won their way to a place in the hearts of the people. In 1894 Gen. Booth was invited to open the U. S. Senate with prayer.

There are now in the U. S. 963 corps and out-posts.

Much temporary relief is given at once at the separate centers, as one may determine for himself if he spends a few hours in almost any of the Army offices.

The Salvation Army first came to the Northwest in an early day and the first flag was unfurled in Seattle.

Staff-Captain Riggs, under Lieut.-Colonel J. W. Cousins, Divisional Commander, with headquarters in Seattle, at this writing (1921), is Secretary of the Northwestern section comprising Washington, Idaho and Oregon. Besides its War work, the Salvation Army has been particularly active in building Rescue Homes and Young Women's Boarding Homes. One of the latter has recently been opened in Bremerton, Wash. In Portland, one of the Rescue Homes took care of 1,088 girls last year (1920).

"Whatever the lot of men," said Lieut.-Col. Roosevelt, "the Salvation Army is found with them."

In San Francisco, when scarcely the earth had ceased to shake, they were there on the ground with food and clothes.

In the Klondike rush, with its frightful disappointments and hardships and crime and despair, a few good women in poke bonnets and blue serge upheld the standards of our race when they were well nigh trodden down.

In the floods of Galveston, Jamestown and Dayton, the Salvation Army boat, laden with warm clothes and food, was first on the scene, and the Mayor of Halifax, when that city had been rocked and wrecked by explosion, said, "Without the Salvation Army and their wonderful, intelligent, unbroken day-and-night efforts, I do not know what I should have done."

They are always ready, for they are taught in their 39 Training Schools thruout the land to deny self, to endure hardships and above all, to obey orders.

But it was not until the Salvationists, one hundred thousand strong, working shoulder to shoulder with "Our Boys, Over There," and its tens of thousands cooperating at home, that the world took off its hat to them.

When the good news came, thru Col. Barker, then in France, to Commander Evangeline Booth, that Gen. Pershing had given orders for the Salvation Army to open work with the Expeditionary Forces, the Commander gathered about her the little company of pioneers who had been trained for the work, and "gave them such a charge as would make an angel search his heart."

Upon arrival at Bordeaux, they were outfitted according to orders, with French regulation Khaki uniforms, with red epaulets and were given the rank of Military Privates.

Late in the summer of 1917, on the evening air of Demage, France, the sound of the old familiar hymn, "Nearer, my God to Thee," sung by an unafraid girl-voice, fresh and young, brought a thousand desperate, homesick, discouraged American boys together to hear the simple story they had been taught at Sunday School "back home." It was full of significance to them and with one voice they took up the air and sang away some of the blues and when the hot chocolate and doughnuts had been passed around, one lad was heard to say that after all, war was not so bad. It was their first "mother touch" since the beginning of war.

From this time on, the Salvation Army became more and more popular. In circus tents, old barns, dug-outs, huts and the open air they worked, nursing, cheering, feeding, with heroic self-sacrifice.

The first doughnuts were patted out and cut with a broken bottle and baked in a pan that only held seven.

But before long the same lassies were supervising the making of 5,000 per day. It is not possible to determine just how many tons of materials were baked up into doughnuts during the war, but the Salvation Army Doughnut Trucks were dear to the hearts of the boys.

The Army quarters were known as "huts." It is recorded by an eye-witness that in one day one of the huts was used for early mass, conducted by a Catholic Priest, a Jewish service, preaching by a Protestant Preacher, besides the regular Salvation Army meetings. Their co-operation with the Red Cross and the Y. M. C. A. was marked. Their work had many phases. At one place, Col. Barker bought $10,000 worth of netting to spread over the faces of the sick soldiers.

I would like to digress here to say that if you, my reader, at any time see a young man making fun of the costumes and customs of the Salvation Army, depend upon it, he was not "Over There," for every soldier who trod the Fields of Flanders or trailed his tired feet thru the French mud or stumbled among the ruins of Belgium, will defend the Salvationists with their honor as they would the Stars and Stripes.

At Camp Lewis during the war, the Hut was the meeting place of thousands of mothers who came to see or learn about her boy. The Camp Lewis Hut is still popular at this writing, April, 1921, and the Salvation Army Hotel is a prominent factor in the housing and the life of the people of the Camp.

The watchwords of the Salvationists are "Service" and "All men are Brothers."

CHAPTER XVIII.

Y. M. C. A. AND Y. W. C. A.

Need of an Organization for Moral Uplift Felt—In 1876 a Y. M. C. A. Organized in Seattle—Spread Into Other Localities—Rapid Growth From 1902—Y. M. C. A. Now in Every Large Town in the State—In 1894 An Effort To Form A Y. W. C. A. in Seattle—In 1900 Reorganized—Ever Since Expanded Rapidly—At Present Time In Flourishing Condition.

In the earlier days of Washington history, as now, there was a felt desire on the part of the people for all the elements of civic strength, moral influence as well as industrial progressiveness. It was felt that the moral character of the young men who were coming in such numbers to the growing state should be conserved and strengthened. Therefore, in 1876 a movement was started that within two months culminated in the organization of a Young Men's Christian Association, in Seattle.

This action on the part of Seattle people soon had its influence on other communities and other branches of this great organization were formed. For a number of years the growth of the Association was quite rapid, but in large part it was not on a permanent basis. In those days throughout the country, Associations were formed to operate in rented rooms, usually on the upper floors of business buildings. Later, after the experimental period had closed, permanent buildings were required as the preliminary condition to organization.

Previous to 1900, Washington, Oregon, Idaho and British Columbia were united in an organization to promote the formation of Association in the Pacific

Northwest, but about that time Washington broke away from the rest of the Northwest and formed its own organizing agency. In 1902 a building era for the Y. M. C. A. in this state began and during the following eighteen years buildings increased in number from three to 13 and in value from $80,000 to $1,721,975. During this period the Associations and branches increased from five to 17 in number, while the paid employes increased from 14 to 92. In 1912 the number of members was 1,797, in 1920 they numbered 11,912, with a great increase in those activities that reach thousands of young men and boys who can not be counted as members. At the beginning of 1921 there were city Young Men's Christian Associations in Bellingham, Everett, Seattle, Tacoma, Olympia, Hoquiam, Yakima, Ellensburg,, Walla Walla, Wenatchee, and Spokane. There were student associations at the State University, State College, College of Puget Sound, Whitman College, Cheney Normal School, and Bellingham Normal School. An industrial Association was flourishing at Raymond, an army organization at Port Townsend and a navy Association at Bremerton. One rural organization had been organized for Pierce County.

The Young Men's Christian Association work in Washington is affiliated with the movement on this continent which has 868,892 members, and with that of the world, which is now seventy-six years old, and has 8,797 branches and 1,330,532 members.

Y. W. C. A.

"Every Great Institution," says Emerson, "is but the lengthened shadow of a single man." If we follow the trend of an event to the heart of it, whether it be the great pageant of Pioneers crossing the Plains in Prairie Schooners to form a new empire, or the completion of a great war ship or an air craft, we will find that in some one heart, the germ first began to develop.

In the early 60's, among the effects of George Williams, a poor draper, who died in London, was found a sketch of the plan to form a Young Woman's Christian Association. These plans were dated forty years before his death. The first branch was organized in Great Britain in 1859, with Mrs. Roberts as its head. In America the soil had been made ready for the seed by Mary Lion and Charles Funney in establishing Holyoke Seminary and Oberlin college; and fostered and tendered by such noble souls as Lucy Larcum, Harriet Beecher Stowe and Louise May Alcott.

On March 3, 1866, thirty women met in the home of Mrs. Henry Durant, Mt. Vernon Ave., Boston, and organized the first Y. W. C. A. in the United States. Two rooms were furnished and in two years it had far outgrown its quarters. Two buildings were then secured, remodeled and furnished at a cost of $40,000. On the list of subscriptions for this fund, there appears the name of Henry W. Longfellow. From this time on the movement spread to every city of any size in the U. S. as well as to every country where Christianity has gone.

The object of the Association is to provide an all-around development, physical, mental, moral and social for girls and women who have not the best advantages at home. To the girl in the city, the girl in the country, the girl in the shops, the foreign-born, the college girl, and the colored girl—all these are provided for in the different departments. The advantages of education, of securing advice and employment, as well as becoming in close touch with the best in art and literature and crafts of all kinds, is unlimited.

In 1894 Mrs. Daniels, who had come to Seattle as the bride of Rees P. Daniels, attorney, from Washington, D. C., urged the women of Seattle to co-operate in forming a branch of the Y. W. C. A. A temporary organization was effected. Mrs. O. C. Shorey offered the use of her store-room on Third and Columbia St., an

organ and other furnishings were donated by interested parties and the real work commenced. Later, Mrs. John Wood brought by-laws and Constitution from Minneapolis and the Constitution of the Seattle branch was formed from these. Mrs. Maud Welbon was chosen president and Miss Martin, Miss Robinson and Miss Devoe were untiring workers.

In 1900 the National board sent Miss Elsie West to re-organize the Y. W. C. A. and Mrs. Wood was chosen President. With the old Olympic Hall on Second Ave., as headquarters, a lunch room, bathrooms, classes, etc., were installed. The total number of membership was 62, but in six months it had grown to 610. The Curtis Building was leased and likewise outgrown; and in 1904 the old quarters of the Old Rainier Club were secured, the membership increased to 977 and other departments were added to its activities. With a membership of 1,338 in 1906, the first camp on Vashon Island was established, a boarding house for girls started and the plans laid for the Alaska-Yukon-Pacific Exhibition building. This venture left a credit of $12,000, which was the nest-egg for the new building of their own.

In 1914 the eight-story building, the best of its kind this side the National Building, New York, was erected on Fifth Ave., Seattle, and now, (1921), the building is used annually by 22,000 persons, with 12,000 in free departments and 10,000 in paying departments. On an average 1,000 girls are housed in this building monthly and 126,305 meals are served annually.

The Work of the Association as carried on in Seattle, tho on a somewhat smaller scale, is much the same in nature all over the Northwest. With the Vocational school, physical education, placement bureau, clubs, housing department, advisory and emergency board, Americanization board, extension and industrial department, colored branch and girls' homes, the Y. W. C. A. takes care of the needs of its 5,000 members in the Seattle branch alone.

CHAPTER XIX.

NURSING

Health of People Neglected—Ancient Nations Indifferent—Advent of Christianity Wrought Change—Medical Science Made Slow Advance—Nursing Knowledge Inadequate—In Past 70 Years Made Great Progress—Florence Nightingale Deserves the Credit—Wars Have Been the Cause of Progress —Nurses Work in Great War.

The maintenance of the health of a people is perhaps the most important function of a government; and yet, in the annals of human history, we find that no other branch has been so neglected. In ancient times we learn that very little care or attention was bestowed upon those who were so unfortunate as to be maimed, or wounded in battle, or stricken by disease.

In Egypt and India we have proof that considerable knowledge was possessed of the efficacy of drugs; and the advantages of sanitation were well known to the Egyptians, but there is nothing to show that any provision had been made or thought given to the necessity of nursing the sick.

The jewish law-giver, Moses, developed remarkable codes of sanitation and hygiene both for family and community life. He is supposed to have gained this knowledge during his sojourn in Egypt; but he has undoubtedly improved upon it and stands to this day as one of the world's great sanitarians. Jewish nursing was done in the home.

In Greece and Rome medical science and surgery made great advances, although nursing, fully as important, received scant consideration. Men nursed the wounded soldiers.

The advent of christianity wrought a change. The great talents and ability of the Roman ladies for such duties were then called into play through the influence of the teachings of the Man of Gallilee. The disciples' love for their great Teacher took the form of service to whomever needed it; especially the sick, neglected and destitute.

One of the most striking features of the new religion was the active strenuous work it brought to women. It exalted them to a higher plane than they occupied under paganism. It is surmised that during the life of St. Paul the first organized effort to succor the sick poor was made through the instrumentality of a woman—a deaconess of the church.

Down through the centuries we find from the time Fabiola founded the first free public hospital under christian auspices in 390 A. D. sisterhoods devoted to the care of the sick and destitute did everything within their power to mitigate the sufferings of the afflicted. But medical science made very little progress during many centuries; consequently the nurses, although animated by the highest purposes and purest motives were lacking in proper organization and technical knowledge, which, to a degree, rendered their efforts abortive.

It is in the past seventy years that the nursing profession has attained the high standard of excellence which it holds today. And strange as it may seem, cruel wars have been largely instrumental in bringing about this desirable result.

The Crimean War of 1854 gave that splendid philanthropic woman, Florence Nightingale, the opportunity to create the modern nursing order. An opportunity which she had hitherto sought in vain. It was the battle of Solferino in 1859 and the lack of system manifest in caring for the wounded upon that bloody battle field, that prompted Henri Dunant to found that

noble society, the Red Cross, which has performed such wonderful work in the alleviation of human suffering in the past sixty years.

In the last and greatest war of all time the advance made in surgery, medical science and co-operative nursing have been truly marvellous. Such terrible conflicts develop, especially in women, all the humanitarian impulses of human nature towards life-saving efforts, and bring into relief all the defects and weaknesses of an organization engaged in such work, thereby tending towards more thorough teaching and careful preparation for future contingencies.

The skill and system and heroism displayed by the American Red Cross and American nurses in that great conflict and the remarkable record made by them in caring for the sick and wounded on every battle field of that colossal contest, will take a first place in the annals of human achievement and add imperishable luster to American efficiency.

The prestige of nursing has been raised by the war. The men in the Army and Navy greatly appreciated the nurses' work, and the civilian population has learned more of her value to the country. The "flu" epidemic quickened the general understanding of the importance of public health nursing. Interest in nursing as a profession for young women has been greatly aroused. In almost every hospital in the state of Washington young women are taking a three-year course of trainnig to fit them for graduation as nurses. Our State University also gives a course of nursing. It is both a useful and honorable profession, and offers an interesting as well as a remunerative field for intelligent and aspiring young women.

CHAPTER XX.

PROHIBITION

Great Movement for Moral Uplift—Crime Reduced—Eighty Years Ago Whisky in Common Use—Even Preachers Tippled—This State Slow in Ratifying—But Legislature Voted Unanimously—Liquor Interests Snowed Under—Prohibition To Stay—Experience When a Boy—A Drunken School Master—Gilded Saloons Deadly Work—Drunken Voters—John Barleycorn Dies Hard—Prohibition Not a Failure—C. B. Blethen's Testimony—Like Saul Saw the Light—Glorious Progress.

Any concentrated movement tending to empty the prisons, increase the bank deposits, provide better food and clothing for children, protect helpless mothers in the household, decrease business of the morgue, elevate the morals of a nation, protect the rising generation from the pitfalls of sin and dissipation, is entitled to be hailed as a harbinger of good tidings, a sign of progress second to none of the century.

Such is prohibition. Abundant statistics can be cited where arrests fell off fifty per cent or more, immediately following prohibition; prisons with less than half the inmates and, in numerous instances, empty jails, with savings accounts of work people more than doubled in an incredibly short time after prohibition prevailed.

The statistics show a result so uniform and one may almost say universal that the fact must be accepted and cause assigned beyond all question of argument; it is admitted by opponents of prohibition as true, in a majority of cases, and claimed to be true, in all cases, by the friends of prohibition.

To illustrate what a tremendous reform prohibition has accomplished we need to go back in history a little way. Eighty years ago as a ten year old lad I witnessed the decanter (sometimes a jug) on the side board or convenient corner of the cupboard containing whisky ready to serve to visitors; later the jug in the harvest field, log rolling, or barn raisings, or in fact at all assemblies one might say except churches; heard the talk of where the parson had "taken too much"; of the deacon who was too fond of his "nip."

Do you doubt it, reader? If so, go a little farther back to find statute law prohibiting the preacher from imbibing and heavy fines to be paid in tobacco for drunkenness.

Washington did not march at the head of the column in ratifying the federal constitutional amendment; but when she did act through her legislature it was by a unanimous vote of both houses. The contest had been long and arduous. The state had gone "bone-dry" in 1918 by a vote of the people—96,100 for, 54,322 against. A statutory prohibition law had been adopted at an election held in 1914, not so stringent as the later law, by an initiatory vote of 189,840 for and 171,208 against, in one of the most spirited spectacular elections ever held in the state.

During the year 1916 a desperate effort was made by the liquor interests to nullify in a measure the law, but they were overwhelmingly defeated in an initiative election.

Prohibition in Washington has come to stay even if it were possible to repeal the amendment to the federal constitution; and with the twin measure of progress, the enfranchisement of women, is cherished by those who fought the battle and now approved by a large majority of those opposing the measure when passed.

My first recollection of school days is of an old squat log house in Ohio, when a brutal teacher got me across his knee with my face down so he could conveniently

reach my nether end and paddled me until the exposed part became black and blue after I had gotten home, at least Mother said it was; I couldn't see but could vividly feel and believe when I sat down to my supper of mush and milk. My brother, who in after years we called "Uncle John" and who became so prominent in Odd Fellowship in Washington, was present and described the struggle as "a fight to the finish"; for I scratched and kicked, bit the teacher's knee (and I had good teeth then) and did all I could to resist. After he desisted and ordered me to my seat, instead of minding him, I struck for the door, outran him (for he was drunk, or at least had been drinking) and reached home in a great rage.

A little later in life, in Indiana, I can remember when it was fashionable in certain circles to entertain with whisky on the table, upon a casual call. Whisky was cheap then, 25 cents a gallon with corn at 15 cents a bushel; but let me be just to the pioneer tipplers, boisterous drinkings were not as prevalent as when later the enticing gilded saloon came so prominently to the front. Still later in life I witnessed disgraceful scenes in pioneer days in our Washington, when whisky was comparatively cheap. If the reader will turn to another chapter of this volume he will find a record of where a bushel of potatoes could be exchanged for a gallon of whisky.

It was the gilded saloon that did the deadly work of enticing the young men to their destruction and undermining the morals and welfare of the nation.

Once upon a time in pioneer days I stood in my door of the block house we had built in Indian war times in the Town of Steilacoom and, which, by the way, is one of the very few of the seventy-five built, yet preserved, and saw more than twenty drunken and half drunken men pass on their way to cast their vote in the election then progressing. This "gang," shall I call them, was herded by a stalwart saloon keeper of

the town, of Scotch descent—I could give his name, but refrain. One of his victims, too drunk to stand alone, had to be supported by two assistant herders. I followed at safe distance and at the polls saw those who were steady in balance enough to hand the tickets to the election officers and for those too drunk the ballot taken from their hands by a third party finally to be deposited in the ballot box. I have seen in more recent days right here in Seattle and also in other cities of the state saloons with counters filled by men, drinking, talking uproariously, part of them young men just out of their "teens"; and yet we hear a rumble of words from the boosters arrayed against Progress to restore their "right" of self destruction and demoralization of the nation.

True, "Johnny Barleycorn dies hard," as expressed in common parlance, but nevertheless is dead, though perhaps we might say, figuratively, not buried.

We still hear the rumble of words that would have the nation go back to pre-prohibition days; to the time when over two billion dollars annually were expended for liquor; when the outlay for intoxicants was more than double all the expenses of the Federal Government. One standing argument, if we may admit it as an argument for the sake of discussion is, that prohibition does not prohibit; that the law is continually being violated; that the craving for stimulants induces men to become criminals who otherwise would be law abiding citizens, in a word, that prohibition is a failure.

If prohibition is a failure, because the law is violated, then our civilization existing under a code of laws is a failure because all man made laws are broken.

It was my good fortune to be in that never to be forgotten and memorable battle of ballots that crushed the life out of the anti-prohibition party in the State of Washington in a fiercely contested election with 98,843 votes against prohibition and 245,399 for.

During the first dry year's experience, arrests for all offences in the state fell off from 18,225 in 1915 to 10,650 in 1916, the law taking effect Jan. 1st, 1916, expenditure for intoxicants from eleven million dollars in 1915 to four hundred thousand in 1916.

In the battle of ballots referred to we encountered the fierce opposition of C. B. Blethen, Editor of the Seattle Times. He actually believed that prohibition would prostrate business in the state and fought prohibition to a finish.

Six months after prohibition had taken effect, Mr. Blethen, like Saul of Tarsus, saw a great light, and like Saul became a teacher, and no more ardent prohibitionist can be found within the bounds of the state. Mr. Blethen recorded in his paper that instead of ruin to business an increase of 20 per cent occurred in a hundred retail stores; when customers began to pay in cash instead of soliciting credit; that labor efficiency in the logging camps increased 20 per cent; collections became easier; deposits in savings banks increased with many new accounts.

In closing a full page article he wrote: "Out here in the State of Washington we are pretty dry now, but we're going to be drier. And the drier we get the better business will be—that has been proved in this first great year. More and better clothes, more and better food for the wife and kiddies. More and better business for everybody; fewer and fewer people in the jails or behind in their bills. Can you beat it?"

But Mr. Blethen was not the only one that saw the light. Johnny Barleycorn began to wriggle and showed signs of life resulting in another battle of ballots after ten months of prohibition with the result of nearly three to one against him with a stern admonition to lie still and confess he was dead.

Glorious Progress this.

CHAPTER XXI.

EMANCIPATION

Emancipation of Women as Important as That of Negro—Husband Was Supreme—Avenues of Advancement Closed to Women—The Apostle of Emancipation—Labored for Cause During Long Life—At Close of Rebellion Prospect Looked Gloomy—Influential Men Desert Cause—First W. R. Convention Held—Intolerance Rampant—Years of Struggle—Final Triumph—Eli Whitney's Patent—The Cotton Plant of Ancient Origin—The "Power Gin" Revolutionized the Industry—Lifted A Burden From Shoulders of Women—Caused A Great War—Brought About Abolition of Slavery—Great Advancement Of All Classes Followed—Beneficial Results Felt On the Coast—Slavery Hideous Institution—Auction Sales In Missouri—Pro-Slavery Brutality—World Better Since Emancipation.

During my life time the emancipation of the women of the nation has been a no less momentous and progressive event, in the annals of the land, than that of the emancipation of the Negro. Some of my readers may look upon this assertion as an exaggeration; let us examine and see if it is not literally true.

The slave holder, by the laws of this free (?) country, was entitled to the earnings of his slave; so was the husband entitled by law to the earnings of his wife.

The slave holder was entitled by law to control the children of his slave; so was the husband entitled to the control of his wife's children; he might take them entirely from the possession of the mother, place them under the control of another and in his will he might cause the outrage to continue even after his death. What more could a slave holder do with the children of his slave?

The negro slave could not sue in court; neither could a white man's wife. A negro slave could not be taught in schools or, in fact, otherwise; the women of this free (?) nation were forbidden to enter the schools for higher education—a slavery different in degree only.

The negro slave could not acquire or hold property; neither could the American white man's wife.

The negro slave could not inherit property; neither could the married American woman.

The negro slave could not hold any office; neither could the American white woman.

A negro slave could not speak in public; neither could a white woman. Perhaps this was not prohibited by statute law, but almost as absolutely by the law of public opinion.

The negro slave could not enter the professions; neither could the white woman, married or unmarried.

Seventy years ago there appeared an apostle of emancipation for negroes and white women in the person of a modest unassuming Quaker girl, Susan B. Anthony. Born between the months, date of the birth, (Feb. 15, 1920) of the two great emancipators of the centuries, George Washington and Abraham Lincoln, Miss Anthony stands shoulder to shoulder with these two great historic names, in inflexible purpose, unyielding to clamor, innate honesty and endowed with mental caliber to impress her design upon the minds of others.

She labored assiduously for the abolition of slavery and the great reform of prohibition while struggling for woman suffrage for sixty years and died March 13th, 1906, past the age of 86 without having finished her great work; but the seed planted has accomplished what she so valiantly and persistently fought for. The

slaves have been manumitted and enfranchised, women enfranchised and national prohibition accomplished.

I met Miss Anthony the first time in Washington City at the Eighteenth National Woman's Suffrage Convention, held in February, 1886, and had opportunity during three days of observing her while presiding over the convention. She had just reached the age of sixty-six and was a little bent by the years of service that she had borne, but for poise and tact and quick-witted action, I have never seen her superior.

Probably no period of her life was more clouded in doubt and beset by disappointment than immediately after the close of the war of the great rebellion. Leaders of the republican and anti-slavery parties advocating the enfranchisement of the former negro slaves cowardly abandoned the advocacy of woman suffrage in the fear that prejudice against woman suffrage might defeat the measure for negro enfranchisement. Such men as Garrison, Phillips, Greeley, Curtis and a host of others of the most prominent men of the nation, who had been in close co-operation with Miss Anthony, now suddenly ceased to favor woman suffrage and persuaded most of the prominent leaders identified with the cause to follow them. To Mr. Tilton and Wendel Phillips, who attempted to persuade her, Miss Anthony, "highly indignant, declared that she would sooner cut off her right hand than ask the ballot for the black man and not for women," kept firmly on the course she believed to be right and in the lapse of years had the satisfaction of greeting most of them back into the ranks for the cause.

The negroes, when their right to vote was granted, followed the lead of the party that had secured their freedom and almost to a man voted against woman suffrage.

Miss Anthony had devoted many years of her life to secure freedom and enfranchisement for the negroes, but did not allow the incident, however disappointing,

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Elizabeth Cady Stanton Susan B. Anthony Lucretia Mott

EMANCIPATORS

and might truly be said exasperating, to swerve her from her life work to secure freedom for all.

In July, 1848, the first Women's Rights Convention was held in Seneca Falls, New York. This was the first organized movement in the United States for the enfranchisement of women. Miss Susan B. Anthony, Mrs. Elizabeth Cady Stanton, Lucretia Mott, three most earnest workers, attended, and there began their life work that has made their names immortal by their persistent contention for the right of women to full citizenship and which after many years of weary labor finally succeeded.

I can well remember the arrogance and brutality manifested by the slave holders and their Northern sycophants for two decades before the emancipation of the slaves and with what hot indignation I experienced it, that led me almost to the brink of belief in the doctrine of total depravity. Now, after seventy years of strenuous work, I can not say I wholly forgive the wrongs inflicted by this class under the color of law and by mob-violence upon the downtrodden negro.

It was only upon later investigation that I came to realize that the spirit of tyranny was not confined to the slave holder, but likewise buried in the breast of many, both North and South, and was manifest against the unprotected by law, whether white or black, women or men. To illustrate a few incidents will suffice.

The Sons of Temperance had announced a meeting of all the divisions of the State (New York) and invited the Daughters to send delegates. Miss Anthony was appointed, her credentials were accepted and a seat in the convention given her. When she arose to speak to a motion, the presiding officer informed her the sisters were not invited to speak, but to listen and learn, whereupon she and other sisters left the hall and were called "bold, meddlesome, disturbers," and hooted as they passed out.

Again at another meeting "Ably Keller Foster" (who had been admitted as a delegate) tried to speak, but shouts of "order" drowned her voice, and after holding her position for ten minutes she was finally howled down. After they (the ladies) left the brick church meeting there were many speeches made condemning the action of women in taking public part in any reform, led by Reverend Fowler of Utica, Reverend Hewitt of Bridgeport, Connecticut, and Reverend Chambers. The last said he rejoiced that the women were gone, as they were now rid of the scum of the convention.

Mayor Barton, who had threatened to resign rather than put the motion that Miss Anthony should be on the business committee, made a speech which the press declared too indecent to print.

Again in New York City, September, 1853, Wendel Phillips accompanied her to Metropolitan Hall, where she delivered her credentials to the secretary, and after they were passed upon, the president, Neal Dow, informed her that she was a member of the convention. Later, when she arose to speak to a motion, he invited her to the platform and then pandemonium broke loose. There were cries of "order, order," hisses, shouts of "She shall not speak," and above all the voice of Reverend John Chambers, who, pointing his finger at her, cried over and over again: "Shame on the woman." Miss Brown stood for an hour and a half on the platform in the midst of this bedlam, but was finally compelled to leave the hall.

Upon another occasion in New York City (October, 1858) Miss Anthony was greeted with a perfect storm of hisses. Finally, in towns where there were not enough people to create a disturbance, the meetings passed off quietly, but they were mobbed and broken up in every City from Buffalo to Albany.

These quotations from the "Life Work of Susan B. Anthony," by Ida Husted Harper, will suffice to illus-

trate the intolerance of a large class of people. In many cases such demonstrations were often led by clergymen who, like the slave holder, tried to justify themselves by quotations from St. Paul. 1. "But suffer not a woman to teach nor to usurp authority over man but to be in silence." 2 "Let your women keep silence in the churches, for it is not permitted unto them to speak." 3 "Wives submit yourselves unto your own husbands as unto the Lord." 4 "Servants be obedient to them that are your masters according to the flesh, with singleness of your heart as with Christ." 1. 2nd Timothy 3 12-12. 2. 1 Cor. 14-34. 3. Ephesians 5-22. 4. Ephesians 6-5.

The Legislature of Washington by act passed in the year 1883 conferred the right of suffrage upon women. This act was declared void by the District Court at Spokane. This ruling was confirmed by the Supreme Court of the territory August 14, 1888, as will be seen by investigation, if not railroaded through the court, was at least put through at railroad speed.

George Turner, in his plea before the Court, said: "We claim that Section 5 of the act which limits the power of the legislature to confer the right of suffrage to citizens of the United States, or to persons who have declared their intention to become such, etc., is to be read as if the word 'Male' was inserted before the word 'Citizen.' Those who insist on the interpretation of Statutes according to their literal reading refuse to understand the philosophy (?) of the law."

Small wonder there came into the minds of many citizens a contempt for the law as administered and which extended to the legal profession and our courts.

The next effort for woman suffrage was more successful. The following States had granted State wide suffrage: Wyoming (1869); Colorado (1895); Utah (1896); Washington (1910); California (1911); Kansas, Arizona and Oregon (1912); Montana and Nevada (1914); New York (1917); Michigan, Oklahoma and

South Dakota (1918). Finally in 1919 a resolution was passed by Congress submitting to the States a proposed amendment to the Federal Constitution extending suffrage to women and later ratified by three-fourths of the States and became a part of the Constitution and the supreme law of the land. The Amendment reads: "The right of citizens of the United States to vote shall not be denied or abridged by the United States or by any State on account of sex." And the great battle was ended and victory for the right won.

February 15, 1921, a memorable scene in the "Hall of Fame," under the dome of the great Capitol Building at Washington was witnessed upon the occasion of unveiling of Statues of Susan B. Anthony, Elizabeth Cady Stanton and Lucretia Mott, in the presence of a great throng of women from all parts of the Nation who had assembled to honor the heroines and martyrs in the great cause of the enfranchisement of women and relief of suffering.

For two hours the Capitol Building was literally turned over to the newly enfranchised women of the Nation to enshrine the heroines of the suffrage cause within the Hall of Fame (and in close proximity) where stand the likenesses of Washington and Lincoln.

Progress this; and let us record it in large letters!

When Eli Whitney in 1793 invented and secured a patent (signed by George Washington in 1794), for a cotton gin, he builded far better than he knew or any of his generation could foresee.

Before the dawn of history folklore and fable reveals existence of the cotton plant, "Where grew a wonderful tree which yielded wonderful buds when ripe, that would burst and expose to view tiny lambs whose fleeces gave a pure white wool which the natives made into garments." This, in the far East, before the dawn of civilization in Western Europe, or the advent of Christianity into the world. The

fleeces of these "lambs" (the cotton buds) laid the foundation for the art of spinning and weaving, all hand work, that in turn grew into a vast traffic by camel train across the arid desert, and by tiny ships at sea.

When Columbus in 1492 landed on the newly discovered shore, the natives met him with cotton yarn and thread for purpose of trade, thus demonstrating the existence of the wonderful tree that produced "Lambs with Fleeces," white as the driven snow, soft as eider-down, strong beyond compare. The cotton fibre adhering so tenaciously to the ripened seed presented an almost insurmountable obstacle for separation by hand—a few pounds a day only to a diligent worker—thus very materially restricting its free use; but when the perfected power gin separated seven thousand pounds an hour, the way lay open for the unrestricted use of the precious boon by the inhabitants of the world, both rich and poor. The cotton-gin did for the cotton industry what the perfected McCormick harvester did for the cereals, opened the way for free use of the bounties of nature. Well do I remember the back-breaking experience with the sickle or hand cradle and have looked upon McCormick almost as the savior of mankind for food, and can now think of Whitney's achievement in the same light in clothing the multitude of the lowly as well as of high estate.

The lower animals are born with their clothing ready made. The dog has his coat of hair; the bird, a beautiful suit of feathers; fishes, their silver scales; the seal, the beaver, the otter, his cover of fur, but with man, "The eyes of them both opened and they knew that they were naked; and they sewed fig leaves together and made themselves aprons." "Unto Adam also and to his wife did the Lord God make coats of skin and clothed them."

From the earliest dawn of history, we read of clothing made of plaited leaves, inner bark of trees or

skins of animals and finally from the fiber of plants, laboriously made by the hands of the single toilers until the advent of civilization or semi-barbarism measured step by step the emergence from barbarism to civilization in better clothing.

Whitney's achievement revolutionized the world, built up great empires, became the direct cause of war and finally resulted in the abolition of slavery.

Without an unlimited supply of cotton, England could not have reached the zenith of power she did and the same may be said of other Empires of the world. Cotton became King with the United States as its empire and like many another King in the flesh, ruled with an iron hand until its insufferable intolerance and tyranny brought on revolt and overthrow from the throne.

We will now go back a little way in the history to inquire how this came about. The founders of our Government knew they compounded with a wrong when they agreed to let slavery live within the borders of the new republic, but justified their action in the belief the institution would be unprofitable and soon disappear and so it did in the Northern States and so it would in the South had not the opportunity offered for the unlimited profitable production of cotton, made possible by the invention and introduction of the cotton-gin. The cotton industry grew apace and with its growth fastened slavery upon the nation, believed by the slave-holders to be permanent.

The present generation can scarcely realize the hideous blemish of slavery upon the nation. The following notice published in an almost adjoining State to where I lived at the time, with other following personal experiences of intolerance will illustrate:

"PUBLIC SALE, State of Missouri, County of Pike, to whom it may concern: The undersigned will on Tuesday, A. D. 1846, sell at public outcry, for cash on premises, where Cook Creek crosses the old mission road, the following chattels, to-wit:

6 yoke of oxen, with yoke and chain; 2 wagon beds; two nigger wenches; 4 buck niggers; 3 nigger boys; 2 plows; 25 steel traps; 1 barrel pickled cabbage; 1 hogshead of tobacco; 1 lot of nigger shoes; 1 spinning wheel; 1 loom; 13 fox hounds and a lot of other articles. I'm gwine to California.

Richard Door, Crier.

James Smith, Owner.

Free head cheese, apples and hard cider."

The King (Cotton) decreed to rule or ruin. The war of the rebellion came; emancipation followed; the King dethroned and the temporal ruin fell upon him while the blessing in disguise wrought better conditions and eventual prosperity.

A couple of years before this notice appeared in Missouri, I had, as a boy of fourteen, experienced brutal treatment by the pro-slavery sympathizers (mob) on the streets of Indianapolis; reviled and threatened because I had free soil papers in my hand for delivery to subscribers—in one instance forcibly taken from me and destroyed before my eyes; an inoffensive, industrious colored man had been set upon by a mob and murdered on a street of Indianapolis not a block away from where, at the time, I was working; a few miles out from the City I knew the Quaker father of the girl I did not "leave behind me" on the road to Oregon did not hesitate to harbor the hunted slave escaping from his brutal master. Small wonder with such experience that I should follow the footsteps of two brothers, respectively two and six years older, and with them become intensely anti-slavery and that I have remained so all these years since.

How can any one say the world is not better than in the days of slavery and the slave trade? How can any one listen with patience to the tirade of agitators teaching the doctrine of discontent; that the laboring mass is downtrodden, oppressed and should rebel?

Let the reader answer.

CHAPTER XXII.

Inventions and Discoveries

Atlantic Cable Bound Two Continents—Attempt to Reach Europe By Telegraph Line—McCormick Reaper—Immense Increase in Farm Values—Improvement In Printing Presses —Edison's Achievements—The Wonderful Wireless—Patents Issued By Government Very Numerous—Success of Fulton's Steamboat—First Baldwin Locomotive—Morse First Telegram Baltimore to Washington—Great Boon of Sewing Machines—List of Most Important Patents—The Average of Human Life Increased.

In 1866 the first message that flashed under the ocean by the successful operation of the Atlantic cable bound the nations of the two continents of Europe and America together as one family, and soon after encircled the whole world.

Despairing in the accomplishment of this great achievement, an attempt to reach Europe by a telegraph line through British Columbia, Alaska and Russia had progressed across the State of Washington with work on the line far to the North. The remains of the line may yet be obtained, though the Indians appropriated most of the wire and growth of timber obliterated the trail made by the builders. The line crossed the Puyallup Valley where I lived at the time, and over the line came the terrible news of the assassination of Lincoln to spread dismay far and wide. To this day we have a highway known as the "Telegraph Road," so named because it is along the line followed by the builders of this projected telegraph line.

It was during the same year that the McCormick reaper was successfully introduced, though really invented in the year 1831. By successive stages over a

period of thirty years perfection was reached by the introduction of the self binder, when the invention became the greatest in results of any in the world; without this famine would now stalk the land unless a vast exodus from our cities to the country should occur to maintain the equilibrium between food production and consumption. The commercial value of all the branches of industry that owe their existence and prosperity to McCormick's invention of the reaper is beyond conjecture. "The value of farms has increased from one billion dollars in 1866 to twenty billion in 1906—more than four times of all the manufacturing enterprises in this country." (Scientific American).

From 1860 to 1870 great improvements were made in printing presses and application of power. As a boy of fourteen I worked in the press room where the power was a negro turning a crank with an output of nine thousand single sheets in ten hours; and have since seen the perfected Hoe Press turning off its tens of thousands an hour of double, quadruple or greater numbers and sizes.

Then followed the decade of 1880-1890 with the wonders of Edison's achievements in electrical work; the telephone, the incandescent light, the phonograph, and, it is recorded, nine hundred and seventy-four other patented inventions to bewilder the world. In this same decade the Bell telephone, improved by Edison, came into commercial use and soon ceased to be a novelty to amuse the curious. In quick succession came the wireless telephone to carry the human voice through space from ship to ship at sea. Can we believe it? Yes, is there any more marvel in this than in the variegated colors of a flower?

The jotting down of these few inventions has whetted my appetite for more and I can well believe my readers may be of the same spirit. While this wandering into a farther dim past is doing violence

to my text "Seventy years of progress," yet I feel an indulgent reader will follow if for no other reason than curiosity.

From the days our Government was formally established to the present time, one million, one hundred twenty-five thousand patents have been issued, thus evidencing an intense activity in grasping the forces of nature for the use of mankind.

Washington, when he built Mount Vernon, had to set his blacksmith at work to make nails, for there were no cut nails until 1775; then he could not have a circular saw to manufacture his lumber before that same year. Seven years after, viz.: 1782, steam engines came into use; finally the following year a balloon went up into the air for the first time; all plows had wooden mold boards until 1782 when a Scotchman named James Small cast one of iron and with iron shares. The next year James Cartwright, an Englishman, revolutionized the world by inventing the power loom. It took a long time, though, to displace the hand loom; a half century afterwards I saw my mother beating the filling in with her strong right arm, and my own life partner, the girl I did not "leave behind me" when I came to the Oregon country, strengthened her arms and body at the loom and wheel in her younger days. John Fitch, an American, has the honor of building the first steamboat in the United States; but we are not told it was a success; we will come to that later. Then an attempt was made by Oliver Evens in 1789 to introduce a steam wagon (automobile) but that too failed if for no other reasons than for lack of smooth roads. 1788 an Englishman invented a grain threshing machine, but he must have kept it well to himself, for I know by experience fifty years after we were still threshing by the flail, or tramping out by horses. A wood planing machine was introduced in 1791, or at least it was in England, invented by Samuel Bentham; 1792 gas was first used as an illuminant, but we for long years used the dim light of a candle or the

saucer of lard with a cotton wick in the center for our chief illumination.

In 1794 Eli Whitney, an American, revolutionized the cotton industry by the use of the cotton gin of which there appears a full account in another chapter. In 1806 an ingenious Frenchman named Jeandean invented a knitting machine. The very next year (1807) Robert Fulton built his famous steamboat and navigated the Hudson River with it. A year after John Stevens, an American, built a steamboat called the Phoenix and went to sea in it. What a voyage! We wonder what kind of a boat it was. In 1825, Joseph Aspin, an Englishman, made the first Portland cement. In 1827 the first friction matches appeared. Prior to this our ancestors, to produce fire, must need either preserve coals buried in ashes, use the flint, or by friction as practiced by ancient peoples, including our own native tribes that first possessed this fair land.

I remember we used to be very saving in the use of matches, and many are the times I lighted my mother's pipe with coals of fire.

Of great importance, the next year (1830) portable steam fire engines were introduced; and chloroform the following year; the first to preserve the material resources of the country, the second to alleviate the sufferings of mankind.

In the midst of these great events, I first saw the light of day on the 29th of December, 1830. Born of stalwart parents, scantily clad until in my "teens," fed on simple diet, principally the products of corn, my younger days were passed in blissful ignorance of what wonderful changes lay before the world. Not so with many matured minds who foresaw the impending transformation and lent their energies to hasten it. Looking back over the vista of years I can but wonder at the change that has come in this short period as compared to the centuries which had preceded it; a period of one century that had equalled in advance of human

knowledge and achievements that of all preceding historical records. What the prehistoric days could disclose we are left to conjecture. I look forward with a firm faith for greater things to come in the no distant future.

1832—In this year "Old Ironside" locomotive was built, the pride of a Baldwin, the founder of a house that has endured to this day in this same line. I visited their extensive works in Philadelphia eighteen years after I had built my first cabin in the Puget Sound Basin, to find a vast network of machinery and an army of mechanics industriously constructing what was then thought to be the acme of perfection—mere pigmies as compared with the hundred ton monsters of the present day.

1833-1834—Witnessed the introduction of the "saw tooth cutter" for reapers and mowers by Obid Hussey and Cyrus McCormick, a step towards the grand achievement in later years.

1839—We now skip to 1839, when Louis Daguerre first produced a photographic positive, universally afterwards known as tintype or daguerreotype, to excite the wonder of the generation then living, and opened the field for the notable achievements of the present day. I have one of those precious tintypes of my father (born in 1804) before me as I write, and one of myself taken nearly seventy years ago (see illustration). Compare these with modern day photographs if you wish to realize the wonderful progress made in the passage of years.

1843—And so it came about we had the typewriter (a very crude affair) in 1843, invented by Charles Thurbur, but did not come into general use for many years.

1844—In 1844, Prof. Morse sent his first telegram from Baltimore to Washington and demonstrated the practicability of transmitting messages by wire to dis-

tant points. Five years afterwards, passing along the National road near Indianapolis, I heard the hum on the wires caused by the wind and thought it was the transmission of messages, and confess, as a boy, to a feeling of awe, or one might almost say superstition. I had never seen a telegraph line before, but had heard the exclamation of a neighbor woman: "Why, Lawsy Massy, I can't see how they send letters over that thing without tearing them all to pieces;" and neither could I, but I couldn't get away in a hurry, as I was riding a grist of corn to mill and the supper depended on its safe-keeping. That same year the electric arc light was invented, but like many other inventions, did not go into use for many years after.

1845—The next year, 1845, the cylinder printing press and the pneumatic tire were both patented and laid the foundation for future achievement.

We come now to an epochal time to lighten the burden of hard labor from off the shoulders of our women. Elias Howe invented the sewing machine, and from that day to the present this great boon has been enjoyed by the women of the land. Be it said, though, as facilities for rapidly multiplying stitches came, there came with it a desire for more and more (stitches) not obtainable under the old system, until some are ready to exclaim there is a greater burden than ever.

From this date to the birth of our territory (March 2, 1853) there first came into notice artificial limbs, chloroform in surgery, the time-lock, Corliss engine, cylinder printing press, electric locomotive, self-raker, combined harvester and half-tone photographic printing. For convenience of ready reference a few of the more important are given in tabular form.

Total patents issued 1790-1918: 1,125,000.

1775—Cut Nails.
1775—Circular wood saws.
1782—Steam engine, of the modern type.

1783—Gas balloon.
1784—Iron moldboard for plows.
1786—First steamboat in United States.
1787—Steam road wagon.
1788—Grain threshing machine.
1790—Wood planing machine.
1792—Gas first used as an illuminant.
1794—Cotton gin.
1800—Art of lithographing.
1801—Wood mortising machines.
1802—First phonograph experiment.
1802—Planing machine.
1803—Steel pens.
1804—Steam locomotives on rails.
1806—Knitting machines.
1807—Steamboat navigated on the Hudson.
1808—First steamboat to make a trip to sea.
1810—Revolving cylinder printing press.
1814—First circular wood saw in the United States.
1815—Modern safety lamps.
1821—Conversion of the electric current into mechanical motion.
1820—Calculating machine.
1825—Portland cement.
1825—First railroad passenger train (England).
1826—First railroad in the United States near Greening, Massachusetts.
1829—First steam locomotive in United States.
1830—First portable steam fire engine.
1831—Chloroform.
1832—Old Ironside locomotive built.
1834—McCormick reaper.
1844—First telegram sent.
1844—Electric arc light.
1846—Ether as an anaesthetic.
1846—Artificial limbs.
1846—First piano key-board player.
1847—Chloroform in surgery.
1847—Hoe's printing press.
1851—Electric locomotive.

1851—Ice making machine.
1853—First efficient type-setting machine.
1856—Sleeping cars.
1857—Coal oil first sold in United States.
1858—Cable car line.
1861—Driven wells.
1861—Barbed wire.
1862—First iron clad.
1868—Oleomargarine.
1869—Air brakes.
1872—Automatic air brake.
1873—Twine binder.
1873—Self binding reaper.
1875—Roller flour mills.
1876—First Portland cement plant in United States.
1876—Telephone.
1877—Phonograph.
1877—Gas engine.
1878—Typewriter.
1878—Half-tone engraving process.
1879—Steam plow.
1884—Linotype machine.
1884—Trolley car.
1885—First electric railway in United States.
1887—Incandescent electric light.
1880—Kodak snapshot.
1889—First practical horseless wagon—the automobile.
1891—Power loom.
1892—Gasoline motor.
1893—Motion picture machine.
1895—Electric locomotive.
1895—X-rays.
1895—Motorcycle.
1896—Wireless telegraphy.
1898—Submarine.
1903—Aeroplane.
1912—Machine gun (Lewis).

The science of medicine, surgery and sanitation have, during the century under review, increased the

average of human life full fifteen years—from twenty-nine to forty-four—more by preventing epidemics than by curing the sick. Further, the introduction of the use of ether in surgical operations to prevent pain was one of the greatest events of the century thus stripping the surgeon's table of its agonizing horror, and contributing to the happiness of the human family by preventing suffering.

The spread of democracy over so wide a civilized region of the world is decisive testimony of a better world. We here, living under the noble flag of the Stars and Stripes, scarcely realize what has taken place within the century, especially since the stain of slavery has been wiped off our emblem of Liberty; slave trade suppressed the world over, prohibition enacted and our women enfranchised. Our own precious government has led the way to achieve these great results and is now the beacon light of the world leading onward and upward. In the ripening of years with our wide experience and matured judgment; with our minds moving us to strive for the betterment of man; with a will to strive to do God's Will, let us look forward with hope and faith that in the distant future the world will finally reach the goal of universal happiness.

CHAPTER XXIII.

Land of Milk and Honey

No Bees on Coast When Immigrants Came—First Bees on Puget Sound Received by Author 1856—Sent By Old Partner William Buck—Honey Business Has Grown To Huge Proportions on Coast—The Great Varieties of Clover Here Made it Possible—Clover Also Helped to Develop Dairying—Now Indeed Has This Land Become a Land of Milk and Honey —Bees Familiar to the Ancients.

And "God called * * * unto Moses * * * and said: And I am come down to deliver them out of the land of the Egyptian, and to bring them out of that land unto a good land and a large, unto a land flowing with milk and honey." Ex. 3:8.

When the author crossed the Missouri River in May, 1852, on his way to the Oregon Country, he left the honey bee behind him. Not a bee was to be seen on the Plains, and to the surprise of many and chagrin of all found there were none in the Oregon Country, or, in fact, none west of the Rocky Mountains.

Further, they found that the sugar maple tree also was absent from the forests, and hence found not only their home supply of sweets cut off, but likewise their spring outing of the sugar camp, a joy forever, gone.

The great achievement of the century, the production of sugar from the beet, had not then been introduced into the United States, though produced in Europe for near half a century.

William Buck, an intrepid enterprising pioneer, who was my partner on the Plains until we reached the forks of the road, one leading to the Oregon Country,

the other to California, later brought two shipments of bees across the Isthmus of Panama, a hazardous though successful venture.

To accomplish this he shipped thirty hives from New York by steamer, packed them across the Isthmus, there to re-ship by sea to San Francisco, and thence to San Felipe by wagon, where he arrived safely with the loss of several swarms; a second trip was equally successful, and from this start sprung the great results of shipping honey by the train load from the Pacific to Atlantic Coast, and we are yet only in the beginning of reaping the benefit of the harvest so industriously garnered by our friends, the little busy bees, from the hidden source of the clover and modest flowers that beautify our fields.

My father used to tell me that wherever red clover would grow that I need not hesitate to plant other seed with confidence of getting returns; that where clover would grow we could be certain to have plenty of milk and butter, fat hogs, fat cattle, in a word, live in a land of plenty.

Now we have the varieties of clover and alfalfa in cultivation that will give us both milk and honey in greater abundance; that is, clover in which the honey-bee can reach the precious nectar which it cannot do with the old variety, the red clover, that we raised almost exclusively in my boyhood days.

One morning, while at breakfast, I think it was in 1856, but am not certain as to exact date, a man knocked at my door and when met with greetings, said that four swarms of bees had just been landed on the wharf for me by the Steamer "Sea Bird" from San Francisco (I think that was the name of the steamer, but again am not certain.) At that time a steamer line had been plying between San Francisco and the ports of Puget Sound, and quite regularly, twice a month, a steamer landed at Steilacoom, where I then lived.

If the bees had been landed in my door yard from mid air I could scarcely have been more surprised. Where on earth did they come from? I do not think I finished my breakfast at that time, being too eager to ascertain more about the strange shipment.

The mystery was soon solved by a letter from my old time partner of the plains, "Billy Buck" (as I always called him) giving a brief account of his ventures and of his success.

Afterwards I learned that Buck sent a few swarms to a Mr. Knowles, then living in Oregon, and afterwards in the Cowlitz Valley in Washington. From these shipments, so far as I have been able to ascertain, has sprung the great business on the Pacific slope of garnering thousands of tons of honey annually, where none were secured before.

Progress, this? Yes, Buck deserves a monument for this great achievement.

By hieroglyphic record in the British museum we learn the honey bee was known to the ancients 3633 years B. C. and by numerous references in our scriptures, in the days of the prophets.

Evidently in those days no "Bee keeping" was practiced. "Chased you as bees do." Deut. 1:44. "Behold there was a swarm of bees and honey in the carcass of the lion." Judges, 14:8.

During many years of the last century the bee hunter flourished and was looked upon as a gifted being, while scant attention was paid to aid the little bee in his work.

I can well remember when the bee was "robbed," by destroying the life of the swarm with fumes of sulphur, killing the queen as well as the workers and contents of the hive, containing bee-bread, partly matured young bees and in many cases blackened old comb was appropriated.

It is different now when the bee keeper can lift the frame with its load of beautiful comb filled with pure honey and if he wants only the honey can place the frame into the centrifugal swift revolving motion, drain off his honey and replace the expensive honey comb back into the hive to be filled again and again; or he may introduce the cheaper manufactured comb in which the little busy inmates of the hive will deposit his precious load fresh from the fields.

In no other branch of rural industry has there been greater progress than in the occupation of bee keeping; profitable as a business, pleasant as a pastime, ennobling in its effect upon the individual, to remain a cherished memory in life.

In the United States Department of Agriculture Bulletin No. 685 (June 20, 1918), I find this item: "The leading commercial authorities in the United States on honey bees and production estimate that the total production is considerably in excess of 200,000,000 pounds.

Table showing the production of honey in the three Pacific Coast states in dates shown.

	1859	1869	1879	1889	1899	1909	1920
Washington	5256	25636	20005	156435	530790	503580	1,596,206
Oregon	821	66858	122348	435028	979140	839981	.....
California	12276	294326	574029	3929889	3667738	10264715	.....

George H. Himes, that painstaking historian of Portland, Oregon, in response to my inquiry many months after the foregoing was written, sent me the following:

"T. T. Eyre, an Englishman, a pioneer of 1843, was living on a farm a few miles east of Salem in 1858, and on July 3rd of that year wrote a letter giving an account of the introduction of bees in Oregon, which appeared in the Oregon Farmer, of August, 1858, Vol. 1, No. 1. From this letter I condense the following:

"William Buck, of San Jose, Cal., left New York on Nov. 5th, 1855, with 30 hives of bees for California and arrived with one-half of them. In February, 1856, he started

out with 42 hives, and managed to get through with seven. A third trip was made in 1857, and he arrived at San Francisco with 83 hives, half of which he saved.

"In the winter of 1856-57 Mr. Buck brought ten hives from California to Oregon and in the fall of the latter year he brought thirty more. The price was $100.00 to $125.00 per hive. At the date this letter was written there were nine hundred hives in California, three hundred twenty-four hives in Oregon, fourteen in Clark County, Washington Territory. I personally know there were more than fourteen in Washington Territory, as S. D. Ruddell and David J. Chambers had several swarms, as well as the Pattison families, Andrew J. Chambers also, on Chambers' prairie. (I had nineteen more myself. M.)

"The first attempt to introduce bees in Oregon was by one Dr. Wood, of Polk County, across the plains. He was able to get them through, or almost through, when he lost them all by upsetting a wagon. That was in 1852, I believe, although I cannot verify that, at present."

CHAPTER XXIV.

Back to the Farm

Movement From Country to City a Menace—Farm Life Should Be Made More Attractive—Good Roads Will Be Great Help —Schools and Churches Should Be Encouraged—Country Boy Generally Superior To City Raised—Make Farming More Profitable—Admission of Ignorant Foreigners Not a Remedy—Improved Conditions On Farms.

Back to the farm is a subject in the minds of many, and a theme for outspoken condemnation of the movement from the country to the city, but one may preach till the "crack of doom" without results unless he can reach the pockets of the people as well as their reason and withal make country life as pleasant as city life.

In the beginning, less than four per cent of the citizens of the new born nation lived in the cities, while now more than fifty per cent are huddled together, having bid goodbye to country life. This movement away from the farm is a serious menace to the moral and material welfare of our nation; and I am moved to add the perpetuity of our institutions. I will not, however, go that far, believing that eventually the situation will become so acute that other influences will work to check the flow from country to city.

Had it not been for the wonderful advance in agricultural labor-saving devices, famine ere this would stalk the land. The great increase in population and great disparity between producers and consumers would have rendered it physically impossible to produce and harvest enough food to feed the multitude.

Another factor, the virgin soil of a continent, yielding its wealth, has contributed to present resulting plenty. We have been living off the fat of the land; mortgaging the future to the detriment of later generations to follow, and shame of the present. This seems a harsh word, but is true. One instance alone (and there are many) will suffice. In England, with a climate and soil not so responsive as vast areas of our nation the average yield of wheat is more than double that of the United States, and this upon land farmed for centuries. The abandoned farms of New England are a mute witness to the waste of our heritage.

A more cheerful outlook is before us. The governmental experiment stations and farms point the way to better methods of farming, although as yet, only a beginning. Our own state college alone is sending out over a hundred specialist lecturers for each year; doubtless the same campaign is now prosecuted elsewhere in the nation, forming an influential army in the good work. The enthusiastic good roads sentiment pervading the whole continent is a leaven pointing to better ways to make country life more attractive, cheapen transportation from farm to market, induce greater numbers of small farmers to make the farm a home instead of merely a business venture, make possible the country high school by transporting children to a common center, build up church centers because of greater numbers of population accessible, and finally, greatest of all influences, promote contentment and love of country.

I venture to say the average boy raised on a farm is better, physically, morally, and shall I add intellectually, in the sense of applied attainments, than the average city lad. The American people should give the subject "Back to the Farm" their most serious thought as a subject fraught with grave danger to our better civilization.

"Forewarned, forearmed" is an adage we should not forget. History warns us of our danger; historians

have recorded many instances of decadence of nations from this cause. The tragic disintegration of the Roman Empire that is directly traceable to this cause is a standing warning; the pilot that looks ahead, steers his ship clear of danger points; the alert traveler is always alive to shun pitfalls that might be his undoing; the discreet business man will carefully scan the future before he enters into an enterprise; the housewife will note the tomorrow's call to look ahead; in every phase of our civilization we feel this caution to look beyond the present; then why, as a part of this great and growing nation, should we as individuals, shut our eyes and cut off our vision to the peril of the future. I say again: "Forewarned, forearmed."

But, as I have said before, unless we can reach the pockets, that is, show that farming can be made profitable in the larger meaning of the word, preaching will not avail. It has been my fortune to have been a farmer nearly all of my life—forty-two years on one quarter section our government assigned me as a homestead, hence I may be pardoned if I should assume in part of what follows to relate experience while recording history from other sources.

Let us now read a lesson in Roman history as recorded by that gifted author and accurate historian "Guglielmo Ferrero" in his recent work "Ancient Rome and Modern America."

"From the third century onwards, the excessive urbanization in the Roman Empire, which had been the cause of the splendor and apparent wealth of the preceding century, began to change into a dissolving force, which drove that brilliant world back into chaos from which urbanization had evolved it. Little by little the expenditure of the urban civilization, the cities and their increasing luxury, out-distanced the fertility of the countryside, and from that moment, the latter began to be depopulated and sterilized by the cities. With each succeeding generation, the impulse

toward the cities became stronger. The numbers and requirements of the modern population increased."

That is precisely what has occurred in the United States during my ninety years of life, covering as we know by the average span of life, near three generations. Again quoting from the same author:

"In order to feed, amuse, and clothe crowded city population; to carry through the construction of the magnificent monuments, whose ruins we still admire; to provide work for the industries and arts of the cities; agriculture was, little by little, ground down by ever increasing burdens. The impulse towards the cities increased, and one day the Empire awoke to find its cities were swarming with beggars, idlers, vagabonds, masons, plasterers, sculptors, painters, dancers, actors, singers—in short, the whole tribe of the artisans of pleasure and luxury. But in the fields which were expected to feed all their men who had crowded into the cities to work or to idle, there was a dearth of peasants to cultivate the land * * * Aggravated by one of the most tremendous blunders in the annals of history, the crisis became insoluble. The agriculture of the Empire, and with it, the Empire itself, received its death-blow."

The author from which these quotations are taken believes this civilization has greater strength to combat the evils outlined than in the Roman age, but will be able to do so, because it does not contain within itself the germ of the cancer which destroyed the Roman world.

These reflections, while disquieting, are not conclusive as to the final outcome, nevertheless, it is the duty of all who love their free institutions to ponder well these problems that confront the nation.

In an argument discussing this subject, the assertion was made that the country-raised youth of the present generation would not stay on the farm, and

that the remedy lay in the continuation of our foreign policy of admitting foreign laborers admittedly ignorant and therefore content to accept what was termed an inferior position in life. If this argument had not gravely been made by a native born citizen, I would hardly dare record it. The proposed remedy would be more dangerous than the disease and would only hasten a catastrophe instead of preventing it.

How any man or boy, woman or girl, can from choice eschew the country and prefer the city life is past my power of comprehension, but I know there are thousands, shall I say millions, that do and to ascertain the cause while recording the ninety years of progress during my life is my sincere desire, and finding the cause, point the remedy.

Let us now indulge in some old time reminiscences back nearly to my fourth birthday.

I can remember when the sickle, the hand cradle, the hand rake and mowing scythe were the only harvest tools we had. At that time there were no more than 20,000,000 inhabitants in the United States and nearly all lived in the country—certainly not more than eight per cent of these in the cities; now the ratio is reversed and fifty per cent of the hundred and ten million have gone to the cities. Had not McCormick and other inventors come to the rescue with the harvester, mower, sulky rakes and like inventions, we could not now thresh all the grain raised by the old methods of the flail, or tramping out process. The steam threshing machine again came to the rescue. The roller flouring mills have displaced the old fashioned burrs requiring the tedious frequent dressing. The exchange of flour for the grist of wheat has gone into the discard. I can remember going to mill with a few sacks of grain and wait my turn for the grist to be ground, sometimes all day and not infrequently over night as well. These "Ways" are gone and who will dare say the new are not better.

I can remember when the "Razor Back" acorn fed hog was common, with his long snout, long curled tail, long hair and lean ham; now the improved breeds, too numerous here to catalog, have occupied the field to more readily assimilate food, arrive early at maturity, supply a carcass of more than thrice the weight and of quality in which there can be no comparison with its predecessors, the "Razor Back." Progress, shall I say.

I never but once remember an accusation of being crazy alleged against me and then only by non-progressive farmers. Having come into possession of a farm with a large number of long "snouts," I marshalled my men with guns in their hands and shot every one of them, big and little, old or young, and rid the place of a real nuisance. It was the only way out from a heavy loss.

Then take the long horned, slab sided, visible ribbed, light quartered "scrub stock" of cattle common in our pioneer days; now followed, transformed, shall I say, by intelligent breeding to the ideal beauties seen in our dairy barns at the fat stock shows, on thousands of farms, and extensive ranges of the wide west. The "Dunghill" fowls of the barnyard have in a measure disappeared and numerous improved breeds have taken their place, cared for by the intelligent guardians in clean, well ventilated quarters, to yield their increased quota of eggs or better quality and increased quantity of meat. Take the horse, our boon companion, one we are loath to exchange for the more rapid movement of the automobile, a comrade, shall I say, compare the scrub stock so long prevalent with the massive Percheron, the Clydesdale or the fleet trotters; to name the extremes will suffice to show the progress.

CHAPTER XXV.

AGRICULTURE

In the Beginning no Faith in Agricultural Possibilities—People Thought Territory Unsuited for Farming—Nine Out of Ten Came Here to be Farmers—Inland Empire Classed as Desert—Now More Than Half Value of Agricultural Products Over There—Dry Farming Around Walla Walla—Large Crops Raised—Pioneer Reminiscence—Hop Culture in the Puyallup—Immense Yield—Industry Ruined by Hop Louse—Agricultural Table—Both State and Counties.

In the beginning of the life of Washington the belief prevailed, notably among our so-called statesmen, that the new Territory and future State could never aspire to become an agricultural country. The frowning forests of the western portion and wide expanse of arid land of the eastern section seemed to forbid aspiration in the line of rural life. Nor did the early settlers, the pioneers, who afterward builded so well realize the great latent heritage that lay beneath their feet until by the gradual process of development the fact dawned upon all that we possessed the great prize, the foundation seat of agriculture, and civilization, in our soil, climate, and mountain streams, a combination seldom, if ever equaled elsewhere on God's footstool.

I first traversed the great Yakima Valley from above the mouth of the Naches to the Columbia River in September, 1854, which was long before a single white man or woman had made settlement in that region and but few had ever laid eyes upon it except a few passing immigrants arriving from off the great Plains, the then so called "Great American Desert." In common with thousands of others I did not think of this "Plain," which I had traversed two

years previously, (1852) as other than a desert country, nor did I dream that the valley I had just passed through possessed a dormant agricultural value.

It was an irrepressible restlessness that moved the older heads to do and dare; that peopled the western trails and landed many on the shores of the Pacific with their restlessness tempered yet not suppressed and prompted action to battle with zeal the serious problems of life that confronted them upon arrival.

I venture to say that nine out of ten who traversed the trail to the Oregon Country came from the farm and came to Oregon to be farmers and founders of a new state, or states in what was then known as the "Wil-a-mettee" Valley of widely exaggerated extent.

Many fell by the wayside as they travelled; others succumbed after the journey was ended; but the great body of bone and sinew, resolutely took up the task, "worked off" their exuberant spirits and prepared for the serious duties of life confronting them were even then grey-beards at the beginning of the struggle.

We did not have at the beginning the tools of later day workers. The hand cradle was a relief from the sickle; the hand power wind-mill to separate the grain from the chaff, a great improvement over the earlier way of the blanket wielded by two stalwarts while a third "fed" the mixed grain and chaff to the artificial air current.

It fell to my lot to have a part, at the beginning, with the life of our Washington, to pull up the agricultural hill on the slope toward the summit, that later hands have moved forward, with no summit yet in sight.

The flail early gave way to the tramping floor, and the grist mills soon banished the boiled whole wheat from the dinner table.

Ere long there came the mowing machine, the harvester, then the threshing machine; followed by the combined harvester and thresher; preceded by the sulkey

plow, the seeder, the disk harrow; in a word, all of the improved agricultural machinery of the age, not forgetting the tractor plow.

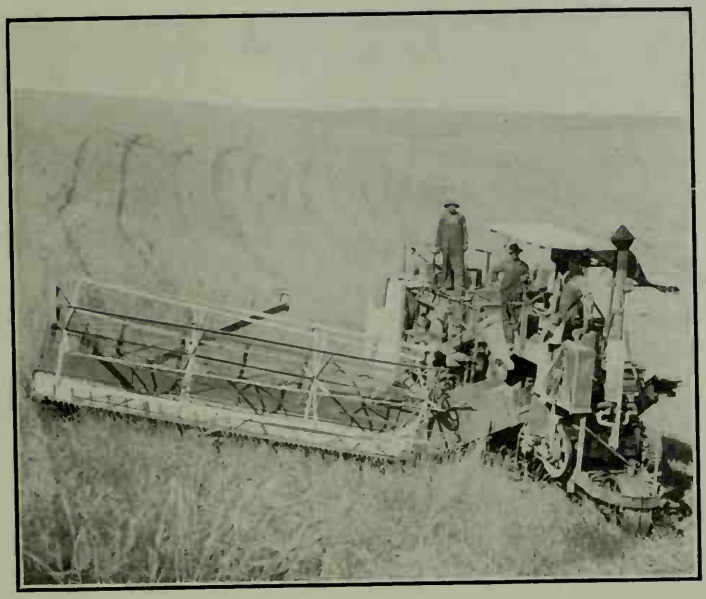
In early days we did not look upon the Inland Empire, otherwise known as the Columbia River Basin, or Eastern Washington, as an agricultural country. The prevalent belief that this whole region, with but restricted exceptions, would be devoted to the grazing of herds of cattle or flocks of sheep soon changed under the intelligent culture of the pioneer farmers, whose vision pointed the way to successful agricultural and horticultural pursuits.

If the reader will possess patience long enough to scan the statistical table by counties, numbered four, (herewith reproduced), by the census bureau, he will there discover that more than half of the value of the agricultural products (including fruit) of the state is produced in the nineteen counties lying east of the Cascade Range of Mountains in this once condemned region.

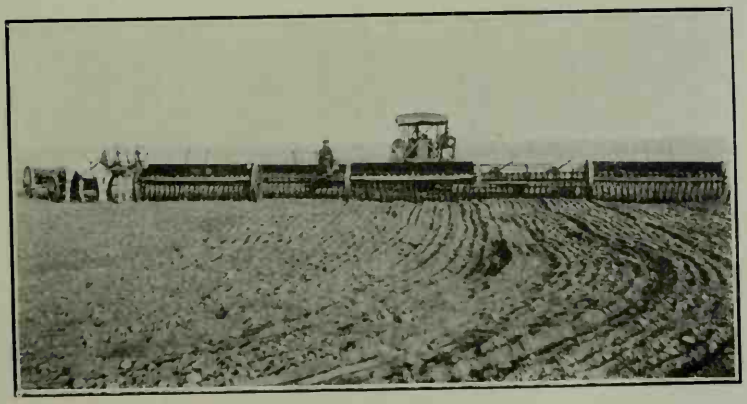
Of live stock in the State valued at $77,572,000, the same percentage holds good for the eastern counties, with the exception of dairy cows and poultry which is held by the Western Division.

I came from the farm in Indiana to the Oregon country to be a farmer in Oregon. As I have said elsewhere, I never came to Washington, Washington came to me; in other words, resided within the boundaries of the new territory when created, and so far as I know, the only survivor of adults here at the birth of the territory.

I have never established residence elsewhere outside the boundaries of the territory and state and for forty-one years resided upon and cultivated our homestead quarter section in the Puyallup Valley; hence to an extent can write from first knowledge. Our experiences (I am speaking of myself and wife) in the beginning



GRAIN HARVESTER IN INLAND EMPIRE



MODERN CULTIVATION IN EASTERN WASHINGTON

represented extreme primitive pioneer life, that pointed the way to prosperous days, though I will not say happier days for the whole period of fifty-eight years we walked together were happy days.

One unheralded, unexpected event in our lives, and in the lives of many others was the introduction of hop culture in the Puyallup Valley. My father, Jacob Redding Meeker, encouraged by a brewer of Olympia, Charles Wood, planted about a peck of hop roots on his farm near Sumner, in the Puyallup Valley in the Spring of 1865. He gave me a few sets or cuttings—roots we called them—about the size of my little finger and not much longer, which I planted the same year. The plants grew apace; bore a considerable crop the same year and marketed at Olympia—180 pounds at 85 cents a pound—brought more than my father received for all other crops grown on his place that year. Attracted by this result, his adjoining neighbor, E. C. Mead, mentioned elsewhere, and partner, L. F. Thompson, procured a barrel of roots the next year from California. I also planted more. From this small beginning, in the following twenty-two years, more than twenty million dollars was paid out to hop growers of this territory and Oregon. My own exports to London reached the sum of over half a million dollars annual average for several years which caused me to follow or precede our shipments for four years where I remained "on the market" for six months of each year. The fact developed, that in our moist cool climate coupled with our method of handling the crop, we were able to compete in the world's markets in quality and at a cost of production far below that of the older districts of the Atlantic States or of Europe. The English growers ceased to renew their yards, plowed up thousands of acres until the total destruction reached fifteen thousand acres.

I can truly say the result following the introduction of hop culture in Washington amazed the world and the hop growers as well.

A little ancient history of current events will not only be interesting, yet likewise illustrate the wonderful results.

I wrote, under the headlines "Farm and Home" and the Seattle Post Intelligencer, published October 30th, 1887, "The biggest story out", as follows:

Thomas Sharkey lives in the White River Valley, and is a respectable and truthful citizen. He tells us he has seven acres and one hundred hills of hops, or in round numbers, seven acres and an eighth; that in the year 1884 he harvested off this yard 25,990 pounds of hops, weight as sold; in 1885, 20,050 pounds; in 1886, 25,180 pounds; in 1887, 16,508 pounds; 87,728 pounds of hops in four years sold off this seven and one-eighth acres. This is an average of over 3,000 pounds per acre for four consecutive years and is hard to beat in any country.

Mr. Sharkey hesitated to tell this, fearing his word would be doubted and referred by name to the parties purchasing and to his neighbors as to measurement of the land. To ease his mind and fortify his assertion we will try to tell a bigger story than he dare tell, and turn the doubting ones away from his track. Joseph Meeker, of Puyallup, raised over four thousand pounds per acre; George Livesly, of Sumner, raised three thousand eight hundred and thirty-eight pounds per acre. If these gentlemen named desire to be protected, then we propose to throw ourselves into the breach and say that in the Puyallup yard, on the home place, we have had a yield of one box to five hills, where there were a thousand hills to the acre, and that the boxes averaged twenty-four pounds to the box, and that there were several acres of such.

Now, if anyone here will tell a bigger story, then we will subside and write about something else; but until then, this must be set down as "The biggest story out."

And so when the hop yield in New York State was not more than 800 pounds per acre and in the English

yards less than 600, small wonder a near panic came in the hop growing districts of the world.

I can truly say that for twenty-two years I never raised a crop of hops that I lost money on, though many of my neighbors could not tell the same experience.

One day we discovered the hop louse in our yards; letters and telegrams and samples poured into our office at Puyallup from many of our correspondents to whom we were sending our weekly hop circular. The mysterious aphis had come into every yard; where from, we could not even conjecture. We knew that the pest would cut down the yield, almost destroy the quality and, of course, increase the cost of production unless successfully combatted. After a five years' struggle, the victory rested with the aphis that produced the live young faster than we could destroy them; our grand quality was destroyed; our market ruined; our occupation gone and there was no other alternative than to haul down the flag and destroy the hop yards.

Practically every variety of agriculture and horticulture developed in temperate zones has been successfully undertaken in the State of Washington by adaptation to its distinctively marked climatic divisions, with the result that the range of product is unsurpassed by any region of similar extent and equalled by few.

West of the Cascades, as shown by the tables of statistics herein published, the region is one of abundant precipitation and mild temperatures because of the moisture laden sea breezes that are among the effects of the warm ocean currents. A large proportion of the humidity is condensed in the high altitude of the Cascades to form the eternal snows of the crests, from which glaciers feed the rushing streams on either slope.

Beyond the Cascade Mountains in Central Washington, in the area drained by the Columbia, the climate is arid, with long summer days of bright sunshine. The soil varies from lava ash through a scale of rich

clays and loams; is very fertile when irrigated, but without water supports nothing but sage brush and scant crops of grass, long accepted as the sign of a desert; but in latter days of demonstration rather as a witness of potential wealth through irrigation.

There are large areas, however, exceptions to this general statement. Along the Eastern and Southeastern border of the State where wheat, and in fact, all other crops, are produced in large quantities without irrigation, as will be shown in the census report by counties. A curious phenomenon (I think that is the proper word to express it) exists where in certain districts, increased productivity of the higher levels prevails over that of the lower plain. True stories could be told of the marvelous yield of wheat on these high hills and steep hillsides, even up to a hundred bushels per acre—of ten thousand bushels to a quarter of a section (160 acres) and similar annual yields all without irrigation. In the river bottom lands in the Puget Sound region, it is the lower levels filled in by the silt issuing from the glaciers that produce the larger crop. The theory as to the richness of the higher level soils of the eastern section of the State, is that in the hills they have been built up by the winds as in the ages past, as with sand dunes, and the finer particles now comprising the soil carried to the higher points; hence give up plant food more freely. Whatever the cause, the fact remains that such are the most fertile.

Although almost a complete digression from the subject in hand yet I am tempted to print some pioneer "Stuff", I wrote more than twenty years ago, illustrating this point of feasibility of farming large areas of the non-irrigible lands in the so-called Walla Walla Valley, a part of the "Inland Empire", to give a glimpse into pioneer life in the wheat growing district.

"When in 1854 my father came to the Oregon country from across the plains, I met him not far from where the City of Walla Walla now stands. I had reached the coast two years before and had settled on

Puget Sound, which was soon after included within the bounds of Washington, so I can truly say and have often said that I never went to Washington, but that Washington had come to me.

Word had come that my father's party was in distress and so I made that never to be forgotten trip through the Naches pass over the mountains on the back of a pony and on down the Yakima River to Wallula, where, securing a fresh horse near noon day, by hard riding, at nightfall I found the party; camped with them, and in due time, piloted them to the Sound; another trip long to be remembered by all, old and young, who took part in the struggle, all gone now to their haven of rest except myself. I shall never forget how enthusiastic my father expressed himself over the "Grand Country" over which they had just passed; —the Grand Round, Wild Horse Creek, and Walla Walla valleys with the grand scenic view of the rich foothills of the Blue Mountains, and the higher, more distant dark timber back ground, the "back bone" of this great range. I did not, at the time, enter into the spirit of his enthusiasm, having my mind set on the country "over by the sea" but I see now with what unerring instinct or, judgment, if you will, my father sized up the country through the vision of his matured mind, for he had reached the half century mark shortly after the trip was ended.

The place where that meeting with my father and his party occurred could not be far from the historic spot where Whitman was butchered and where that dreadful massacre of November, 1847, occurred, when fourteen people were destroyed, fifty others suffered in captivity the indignities of Indian warfare until ransomed by the agents of the Hudson Bay Company. The horrors of that day was still fresh in the minds of the people. Although the war that followed was ended and apparent peace prevailed, yet the little party kept their guns within reach and a watchful eye to guard against surprises. As I so recently traversed this valley and noted its wonderful fertility and beauty,

I cease to wonder why the mission was established in the then lonely valley of Walla Walla; or why my father became so enthusiastic over what he saw and with an almost prophetic eye, apparently knew what the future would bring forth.

Whitman had come into the valley eighteen years before the time of which I have written. While as a missionary he had not neglected the work of religious teaching, yet his efforts had been strenuously directed to the more important labor of developing the land-planting crops, building a mill and other work, necessary for the maintenance of his mission. He was an industrious, persistent man, and we are told so much so as to be called by some imperious; and being a physician and not a preacher, small wonder that he should turn his attention to the material interests of the Indians as well, or perhaps more, than their spiritual and thus run counter to their ways of ancestral breeding that could not be changed in a generation and so, in a way lost their confidence and finally incurred their hostility. We have another like incident in the case of N. C. Meeker, who fell at his post in Colorado, a sacrifice to his zeal and mistaken efforts to change the habits of the Indians, as we might say in the twinkling of an eye, instead of following the only practicable course, as prescribed by nature's laws, of evolution. But I am not to write of the mission or of the mission work except where their labors are intimately connected with the "Trail". At the time of which I have written, when I met my people so near the spot where the tragedy had occurred, not a living soul (except the Indians) were seen. The mission had vanished; the mill had been destroyed; the cabins burned; the fields overrun by the roving bands of horses, the fences gone—nothing left but the sad uncared-for graves of the dead at the foot of the little hill nearby, where the monument now stands.

The Oregon Trail of 1843 ran to and through the mission grounds, hence this spot is doubly sacred we might say, and in fact some of the victims of the outbreak were of the homebuilders recently arrived from across the Plains. Of the immigration of 1843, the first wagon train to make the passage this far, it is safe to say, all came to the mission. History records that nearly a thousand men, women and children came that year—more than three times as many as all of the homebuilders that had come before—and, having opened their own wagon road for near six hundred miles, we feel these people are entitled to the honor of having the track they followed adopted as the "Old Oregon Trail," "The Trail that led to Empire." In later years, hundreds of thousands followed this Trail, though afterwards, numerous parallel trails were travelled and a great many so-called "Cut offs" which in too many cases proved the undoing of those attempting the newer and untried routes. The Trail of 1843 came into the lower lands from off the Blue Mountains nearby where the town of Pendleton now stands, nearly eighty miles distant from the old Hudson Bay Post of Walla Walla (now Wallula), situated on the Columbia River north easterly from Pendleton; and all of that immigration wended their way to that point, with their wagons and stock. Between these two points the Whitman mission was passed within four miles of the city limits of Walla Walla. Here the first substantial help came to the weary immigrants and again more substantial aid at the fort. Here, a part of the people constructed boats and floated down the Columbia River, but most of them turned sharply to the southwest and followed the left bank of the Columbia almost all the way to The Dalles, through the shifting sands of the narrow Columbia bottom and over the rough and rounded boulders so thickly strewn in places as to almost make progress impossible. On all this stretch, no visible marks of the Trail is to be found except near the John Day River where the precipitous bluff facing the Columbia compelled the

immigrants to leave the bottoms and climb the hills which as Fremont says, "Well deserve the name of mountains", and he knew for he was there at the time the struggle was going on. That drive down the Columbia must have been one of the most disheartening experiences of the whole trip and but for the hope that the end was near, the obstacles would have been overwhelming. As before written, no traces of the Trail are visible all along the Columbia, but we know there was where they came. The shifting sand dunes have arisen in many places, only to be swept away with the change of the fickle winds that at times rush up the Columbia gap, to again form in another place and assume another shape, making the outlook drear, as though indeed it was a "God forsaken" country with no hope for the habitation of man. And yet I am credibly informed that these same shifting sands a little farther up the river with precisely the same conditions as here described, have been brought under control, rich crops harvested and high acreage values obtained, simply by the touch of water, either for alfalfa or fruit. It is simply amazing to see what wonderful changes water has brought on the apparently sterile desert lands.

I remember having had some keen experience with these shifting sands, when in 1854 I wrapped myself in my saddle blanket and lay down for the night just opposite the old Fort (Walla Walla, now Wallula) while waiting an opportunity to cross the river. I came near being buried alive as I lay in deep slumber after a hard day's ride in the hot sun of a September day. At this place, the old Oregon Trail on the left bank of the Columbia was abandoned and a new route across the river opened to the Puget Sound country up the Yakima Valley to a point a little way north of the present city of Yakima and thence through the Naches pass over the Cascade Mountains. I had come, as before noted, to meet my father's party known to be on the Plains. I had spent six anxious days in the saddle or afoot in the search with no tidings

when at nightfall the bank of the river had been reached, a barrier to further progress I could not alone overcome. I think there are well authenticated instances where man and horse swam the Columbia. I knew that it was impossible for me or my pony to accomplish a crossing alone. I had tried hard during the day to get the Indians to cross me six miles above but found them sullen and offensively arrogant and met with a flat refusal. This however, was a year before the systematic murder of all whites found in the country east of the Cascade Mountains. The first pioneer train (1853) had gathered enough drift wood together out of which to whip saw lumber sufficient to build a boat and crossed their wagons over the mighty river. For three years this Northern branch of the Oregon Trail was kept open; and many wagons reached the Puget Sound country in that way—through the Naches Pass.

In the Walla Walla district, much of the land will yield good crops without irrigation, as noted elsewhere; although a large area is under the ditches leading the water out upon it.

A quite recent experience of irrigation from artesian wells has raised high hopes for an abundant supply of water in otherwise unavailable sections, but as yet, these wells seem to have been confined to a restricted district of five, now sunk to the depth of 600 feet, in the City of Walla Walla. Each throws a heavy stream under a sixty pound pressure with a seeming unfailing, and one might say almost unlimited, supply of pure soft water.

The valley of Walla Walla is not a valley in the common acceptance of the term; with a stretch of bottom land bounded on either side with high table land, but is a large scope of well watered country, aggregating some seventy townships, approximately a million and a quarter acres of arable land. The river is formed by tributaries rising in the Blue Mountains from the south and east which emerge from the foot hills into an undulating plain of table land interspersed

with level bottoms in the aggregate of very large area and very fertile, all, or nearly all, both table and bottom alike profitable for general farming, or fruit and vegetable culture.

When I made my second trip to London (I think it was the winter of 1885-86) while waiting for our hop shipments to arrive, I visited that quaint old town of Reading on one of their market days. After their dinner I talked to the assembled farmers and remember, among other things, said that they could produce wheat in the Walla Walla country at the cost of a shilling (24 cents) a bushel; that the soil was easily plowed; the seasons for planting and harvesting long, and that the transportation charges to their market was low. An outcry of incredulity or amazement arose from all along down the whole length of the table, the gist of which was that such figures spelled ruin to the English farmer. Questions were poured in on me so fast that I could not possibly answer all of them. Dr. Blalock, then as now, (since deceased), of Walla Walla, was my authority for the cost of production, having given me the figures in detail; the farmers of Reading knew the cost of freight and when afterwards the information was given that at the then prevailing price the Walla Walla farmers were making money, while the English farmers admittedly were losing, one may not wonder the figures given aroused general interest. For a long series of years the English wheat acreage declined and the land was seeded to pasture. The Doctor would not now say he could produce wheat at a shilling (24 cents) a bushel, neither would he have to accept 50 cents a bushel as he did then. With the vastly improved farm machinery and a more systematic application of business principles, even with the much higher priced land and doubled wages of day laborers, wheat now can be produced at a cost of sixty cents a bushel. I have this latter figure as to cost of production from the lips of an extensive wheat grower of Walla Walla country, who be it said spoke from the standpoint of experience.

	THE STATE	Adams	Asotin	Benton	Chelan	Clallam	Clarke	Columbia
VALUE OF ALL CROPS 1909	$74,101,381							
VALUE OF ALL CROPS 1919								
Total ... dollars	227,212,008	9,472,430	2,303,478	5,784,280	13,340,739	1,044,138	4,293,064	6,623,271
SELECTED CROPS (acres harvested and production)								
Cereals:								
Total ... acres	2,850,910	314,451	39,378	51,238	6,355	3,654	14,192	91,630
bushels	53,390,502	3,984,177	761,071	387,036	68,180	148,374	481,454	2,632,689
Corn ... acres	34,799	809	292	1,456	1,723	22	615	1,303
bushels	901,905	9,786	5,154	59,031	26,246	605	14,041	32,045
Oats ... acres	191,673	1,554	452	40	179	1,219	8,923	785
bushels	8,073,481	20,638	6,204	1,105	1,372	55,025	349,250	20,479
Wheat ... acres	2,494,160	308,821	36,104	38,226	4,425	2,009	3,943	82,310
bushels	41,837,909	3,910,240	693,142	269,282	40,267	78,513	95,922	2,342,964
Barley ... acres	84,568	1,768	2,529	375	24	239	202	7,172
bushels	2,249,856	36,490	56,553	6,582	275	8,755	5,983	235,710
Rye ... acres	41,677	1,482		11,119	4	27	190	
bushels	229,653	6,873		50,631	20	456	4,608	
Mixed crops ... acres	3,687	17		10		138	310	60
bushels	92,364	150		160		5,016	11,379	1,500
Other grains and seeds:								
Dry edible beans ... acres	1,783		107	65	14	12	40	6
bushels	17,683	4	1,071	1,575	88	151	618	61
Dry peas ... acres	30,832	5	2			973	10	58
bushels	442,620	30	5			21,626	253	411
Hay and forage:								
Total ... acres	1,064,130	35,428	10,950	25,476	18,770	8,210	30,574	13,224
tons	2,013,913	28,726	14,608	70,375	24,924	20,457	72,401	24,880
Vegetables:								
Potatoes (Irish or White) ... acres	55,132	565	272	606	649	561	4,172	236
bushels	5,866,710	15,888	13,990	81,492	35,302	61,342	326,552	14,421
Other vegetables ... acres	9,460							

FRUITS AND NUTS

		THE STATE	Adams	Asotin	Benton	Chelan	Clallam	Clarke	Columbia
Small fruits:									
Total	acres	7,434	1	55	150	55	43	231	35
	quarts	16,884,745	2,149	85,195	244,423	84,737	80,884	282,837	48,833
Strawberries	acres	3,087	1	30	136	25	14	172	14
	quarts	6,377,368	1,154	44,253	225,299	44,495	30,775	226,464	24,348
Raspberries	acres	1,786		10	5	17	7	14	11
	quarts	4,599,678	350	11,261	9,068	25,401	5,324	13,708	11,275
Blackberries and dewberries	acres	1,403		14	5	6	2	16	6
	quarts	3,691,065	148	28,523	4,574	10,128	1,607	14,421	7,005
Loganberries	acres	546				2	19	17	2
	quarts	1,157,778	70	172	7	958	42,401	18,627	2,322
Orchard fruits:									
Total	bushels harvested	25,957,797	7,693	82,763	1,591,658	6,818,068	31,458	588,593	201,658
Apples	bushels harvested	21,568,691	5,615	25,968	1,290,696	6,300,380	26,204	163,627	192,053
Peaches	bushels harvested	1,544,859	475	29,915	154,091	179,599	17	4,802	5,640
Pears	bushels harvested	1,728,759	864	5,241	114,519	251,594	1,899	16,070	1,430
Plums and prunes	bushels harvested	785,920	286	2,803	18,334	26,933	2,098	394,912	1,705
Cherries	bushels harvested	249,226	389	16,775	10,823	23,623	1,239	9,180	761
Apricots	bushels harvested	79,908	64	2,061	3,173	35,926	1		69
Grapes	pounds harvested	3,961,036	2,045	57,625	849,674	141,345		86,947	11,840

		Cowlitz	Douglas	Ferry	Franklin	Garfield	Grant	Grays Harbor	Island
VALUE OF ALL CROPS 1919									
Total	dollars	1,653,555	7,393,094	672,089	2,446,563	4,051,682	4,520,294	1,507,336	1,121,312
SELECTED CROPS (acres harvested and production)									
Cereals:									
Total	acres	5,854	235,311	5,049	104,599	73,394	174,747	4,078	5,818
	bushels	257,681	1,896,943	64,220	931,854	1,724,737	1,334,552	191,689	249,965
Corn	acres	34	888	758	134	269	860	4	5
	bushels	693	7,455	13,350	3,087	5,045	5,266	84	72
Oats	acres	4,195	7,250	570		269	2,491	2,894	1,855
	bushels	210,899	88,357	13,456		5,835	40,424	156,569	94,078
Wheat	acres	1,248	223,855	3,346	102,671	61,500	169,412	926	3,396
	bushels	33,333	1,773,291	31,664	920,416	1,455,801	1,237,573	26,197	139,017
Barley	acres	215	1,422	158	63	11,354	872	171	411
	bushels	7,666	16,563	3,828	490	258,041	9,470	6,129	14,566
Rye	acres	58	1,596	217	1,706	2	11,112	38	111
	bushels	1,488	8,819	1,922	7,661	15	41,819	771	917
Mixed crops	acres	100	300					45	40
	bushels	3,522	2,458					1,939	1,315
Other grains and seeds:									
Dry edible beans	acres	4	101	57		20		1	2
	bushels	40	1,258	496		212	2	13	24
Dry peas	acres	5	7			15		42	1,130
	bushels	231	15			55		1,207	27,978
Hay and forage:									
Total	acres	13,546	50,456	19,958	13,074	11,033	38,266	10,744	4,813
	tons	33,942	26,854	16,032	14,138	14,967	34,818	35,925	13,861
Vegetables:									
Potatoes (Irish or White)	acres	1,238	1,263	584	21	106	521	808	688
	bushels	133,262	43,751	28,810	908	4,509	23,307	78,299	86,932
Other vegetables	acres								

FRUITS AND NUTS

		Cowlitz	Douglas	Ferry	Franklin	Garfield	Grant	Grays Harbor	Island
Small fruits:									
Total	acres	82	28	35	9	7	14	198	61
	quarts	110,805	31,034	20,732	8,941	8,127	18,974	227,169	88,225
Strawberries	acres	33	10	12	5		8	58	41
	quarts	29,433	16,213	6,782	5,186		14,583	67,348	56,129
Raspberries	acres	5	8	13	2	3	1	16	1
	quarts	7,457	7,838	5,918	2,340	2,434	542	16,826	2,191
Blackberries and dewberries	acres	38	5	2		3	1	108	9
	quarts	54,604	2,873	1,217		3,614	419	125,390	10,354
Loganberries	acres	4				1		13	6
	quarts	16,259	379	190		2,075	26	14,952	14,514
Orchard fruits:									
Total	bushels harvested	79,189	1,372,934	27,598	20,793	17,705	383,959	85,612	25,226
Apples	bushels harvested	59,586	1,299,651	23,703	13,708	3,763	345,927	79,875	20,555
Peaches	bushels harvested	820	34,381	2,088	5,540	7,652	21,172	411	236
Pears	bushels harvested	4,971	22,348	532	1,107	2,700	12,550	1,791	2,315
Plums and prunes	bushels harvested	9,709	4,927	620	336	2,812	1,696	3,252	836
Cherries	bushels harvested	4,103	2,829	655	98	778	1,811	283	1,280
Apricots	bushels harvested		8,789		4		802		4
Grapes	pounds harvested	16,424	19,052	2,162	31,600	44,535	34,190	160	153

	Jefferson	King	Kitsap	Kittitas	Klickitat	Lewis	Lincoln	Mason
VALUE OF ALL CROPS 1919								
Total ..... dollars	337,915	4,171,003	949,894	3,908,239	4,499,492	3,909,882	15,909,355	376,752
SELECTED CROPS (acres harvested and production)								
Cereals:								
Total ..... acres	422	3,430	173	23,274	78,629	20,481	429,840	1,105
bushels	17,496	160,232	4,788	676,270	1,207,748	803,074	6,452,747	36,019
Corn ..... acres	2	71	3	45	214	77	785	26
bushels	70	3,384	202	975	3,405	1,353	10,002	1,286
Oats ..... acres	293	2,130	73	4,660	1,755	13,544	9,900	678
bushels	13,212	130,598	2,573	220,989	55,873	611,755	298,110	26,578
Wheat ..... acres	89	1,034	86	16,378	71,856	5,468	404,732	188
bushels	2,760	20,207	1,845	387,989	1,094,638	145,158	5,843,747	4,627
Barley ..... acres	38	171	9	2,031	2,840	861	12,803	33
bushels	1,444	5,604	132	64,354	46,932	30,321	283,704	581
Rye ..... acres		8	2	158	1,856	178	1,326	15
bushels	10	98	36	1,863	5,056	3,529	11,607	202
Mixed crops ..... acres		14		2	108	350	276	165
bushels		306		100	1,844	10,909	5,375	2,743
Other grains and seeds:								
Dry edible beans ..... acres		10	2		10	8	40	20
bushels	4	97	24		72	89	413	218
Dry peas ..... acres	15	10	4			27	51	8
bushels	322	377	106			680	308	106
Hay and forage:								
Total ..... acres	3,292	23,931	6,812	49,285	27,773	33,772	56,931	3,972
tons	8,490	68,457	14,752	101,814	40,265	76,177	67,316	8,437
Vegetables:								
Potatoes (Irish or White) ..... acres	220	3,069	592	771	392	2,033	1,558	217
bushels	29,574	329,640	64,520	48,611	22,517	205,816	77,462	19,729
Other vegetables ..... acres								

FRUITS AND NUTS

		Jefferson	King	Kitsap	Kittitas	Klickitat	Lewis	Lincoln	Mason
Small fruits:									
Total	acres	18	1,082	346	23	189	312	45	36
	quarts	39,091	2,770,719	841,796	32,483	159,633	328,450	42,176	35,674
Strawberries	acres	10	645	271	11	158	141	15	11
	quarts	30,668	1,622,082	759,627	22,388	132,747	158,332	24,990	9,833
Raspberries	acres	2	117	29	8	14	38	20	5
	quarts	3,063	332,859	25,447	3,830	8,133	33,808	8,959	3,406
Blackberries and dewberries	acres	4	138	23	2	10	63	7	15
	quarts	1,870	303,084	16,120	2,955	7,556	71,482	5,518	17,455
Loganberries	acres	2	141	12		5	63	1	4
	quarts	2,867	405,477	29,122	42	8,740	54,853	674	3,015
Orchard fruits:									
Total	bushels harvested	9,380	254,983	77,792	101,817	399,000	139,787	137,108	22,681
Apples	bushels harvested	7,678	205,563	63,079	90,181	342,006	112,516	76,598	19,145
Peaches	bushels harvested	28	2,304	166	2,360	17,683	393	33,950	14
Pears	bushels harvested	606	14,992	3,080	5,946	14,513	6,849	18,358	2,011
Plums and prunes	bushels harvested	646	10,145	3,941	2,029	3,062	16,673	4,968	1,341
Cherries	bushels harvested	422	21,905	7,519	1,281	2,875	3,321	2,864	170
Apricots	bushels harvested				20	18,861	4	367	
Grapes	pounds harvested	25	12,610	1,005	2,676	139,179	3,597	61,650	70,160

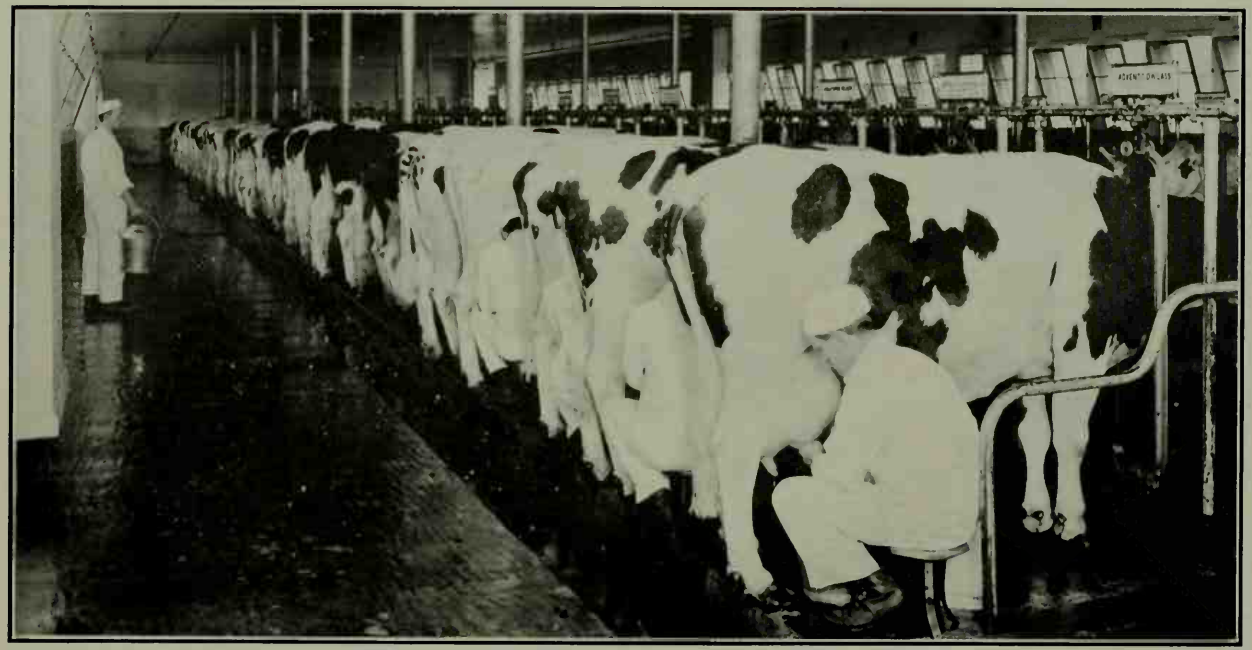
		Okanogan	Pacific	Pend Oreille	Pierce	San Juan	Skagit	Skamania	Snohomish
VALUE OF ALL CROPS 1919									
Total	dollars	5,814,324	524,373	404,433	4,174,339	719,604	7,281,219	323,331	3,088,469
SELECTED CROPS (acres harvested and production)									
Cereals:									
Total	acres	54,221	144	3,787	2,814	4,908	23,903	551	4,929
	bushels	409,839	7,121	37,347	83,518	143,499	2,044,176	17,900	360,588
Corn	acres	2,861			190	72	119	98	36
	bushels	34,897			5,242	1,525	3,107	3,136	1,364
Oats	acres	3,103	128	1,790	1,847	1,836	21,212	418	4,041
	bushels	43,520	6,677	24,986	64,052	70,692	1,947,248	14,039	329,536
Wheat	acres	44,356	12	1,841	423	2,336	1,892	15	583
	bushels	300,802	372	11,642	8,334	57,380	62,358	266	20,106
Barley	acres	1,653		72	82	97	556	2	196
	bushels	20,397		212	1,887	2,074	28,148	48	6,904
Rye	acres	2,236	4	65	196	40	10	13	23
	bushels	9,903	72	336	2,566	461	187	186	446
Mixed crops	acres	12			31	522	110	5	45
	bushels	320			793	11,267	2,970	225	2,049
Other grains and seeds:									
Dry edible beans	acres	22			8	45	20		30
	bushels	298		4	62	353	264	2	296
Dry peas	acres	4	3	4	61	1,496	589		45
	bushels	40	57	105	1,285	22,191	15,601		1,161
Hay and forage:									
Total	acres	79,286	5,598	13,629	14,427	4,998	24,155	2,510	25,493
	tons	90,681	12,555	10,264	33,495	10,357	81,596	4,497	76,146
Vegetables:									
Potatoes (Irish or White)	acres	1,459	228	425	2,048	238	2,558	189	1,772
	bushels	79,970	24,412	26,705	251,404	18,166	570,919	19,405	246,523
Other vegetables	acres								

FRUITS AND NUTS

		Okanogan	Pacific	Pend Oreille	Pierce	San Juan	Skagit	Skamania	Snohomish
Small fruits:									
Total	acres	74	416	20	1,901	27	130	51	304
	quarts	69,146	711,379	13,587	7,361,312	41,730	285,854	54,250	621,891
Strawberries	acres	23	17	13	308	10	71	47	125
	quarts	32,561	35,831	7,647	1,278,057	11,684	191,992	50,694	256,381
Raspberries	acres	28	11	4	905	2	22	1	87
	quarts	18,642	8,734	2,839	3,205,532	2,632	50,680	937	152,657
Blackberries and dewberries	acres	7	75		594	9	20	1	68
	quarts	4,372	63,330		2,567,767	6,994	21,813	1,004	173,648
Loganberries	acres	2	5		55	6	8	2	8
	quarts	1,143	15,151	293	191,266	20,292	15,605	1,415	12,269
Orchard fruits:									
Total	bushels harvested	1,396,546	15,197	10,241	207,882	48,015	81,176	65,141	123,977
Apples	bushels harvested	1,354,540	13,850	9,185	172,355	37,913	61,476	51,409	98,609
Peaches	bushels harvested	21,121		44	273	170	60	769	205
Pears	bushels harvested	12,239	566	404	9,489	7,503	7,919	2,808	8,310
Plums and prunes	bushels harvested	3,093	681	450	8,581	1,521	5,940	9,326	9,660
Cherries	bushels harvested	3,866	100	158	16,934	908	5,781	827	7,175
Apricots	bushels harvested	1,687						2	
Grapes	pounds harvested	40,031	5	1,000	12,857	235	737	12,304	1,055

	Spokane	Stevens	Thurston	Wahkiakum	Walla Walla	Whatcom	Whitman	Yakima
VALUE OF ALL CROPS 1919								
Total ..... dollars.....	15,801,713	3,951,664	1,467,051	336,879	15,806,849	3,944,843	30,824,407	32,458,658
SELECTED CROPS (acres harvested and production)								
Cereals:								
Total ..... acres.....	193,006	33,212	7,675	40	206,395	15,012	544,283	68,928
bushels.....	3,793,173	595,895	207,323	2,193	5,634,461	588,316	13,355,983	1,636,165
Corn ..... acres.....	1,805	3,044	110		1,424	48	1,962	12,635
bushels.....	28,007	61,515	1,796		47,331	1,446	41,551	468,351
Oats ..... acres.....	26,754	6,482	4,969	40	290	11,338	38,744	2,972
bushels.....	702,589	180,117	156,539	2,193	6,251	497,986	1,480,125	123,552
Wheat ..... acres.....	159,427	22,294	1,378		197,482	2,134	482,443	45,521
bushels.....	2,963,540	328,288	28,982		5,382,796	43,100	11,230,528	850,822
Barley ..... acres.....	3,483	795	180		6,078	852	18,863	5,898
bushels.....	84,907	15,899	5,740		189,913	29,831	579,066	184,657
Rye ..... acres.....	1,417	463	927		1,076	222	1,916	1,864
bushels.....	12,901	7,461	11,612		6,882	2,453	18,043	7,743
Mixed crops ..... acres.....	47	85	106		42	408	301	38
bushels.....	290	2,030	2,586		1,220	13,331	5,535	1,032
Other grains and seeds:								
Dry edible beans ..... acres.....	713	70	10		14	25	70	237
bushels.....	4,325	701	119		82	272	807	3,568
Dry peas ..... acres.....	17,636	78	67			2,981	5,490	16
bushels.....	216,322	646	1,827			82,472	47,063	130
Hay and forage:								
Total ..... acres.....	66,418	58,556	15,355	3,513	31,535	34,101	63,710	110,556
tons.....	90,373	77,310	27,801	10,626	81,402	86,823	107,093	380,283
Vegetables:								
Potatoes (Irish or White) ..... acres.....	9,856	2,014	1,041	142	621	1,449	2,557	7,393
bushels.....	674,207	153,625	93,356	20,055	71,006	201,674	153,906	1,514,743
Other vegetables ..... acres								

FRUITS AND NUTS		Spokane	Stevens	Thurston	Wahkiakum	Walla Walla	Whatcom	Whitman	Yakima
Small fruits:									
Total	acres	426	82	305	25	92	255	151	120
	quarts	585,343	63,855	446,574	11,652	159,302	554,202	118,855	192,726
Strawberries	acres	304	37	146	8	36	50	13	58
	quarts	473,910	32,240	138,093	5,794	98,991	83,100	4,436	122,828
Raspberries	acres	44	24	73	9	34	144	10	42
	quarts	43,730	13,766	103,340	3,022	28,358	359,121	15,556	48,694
Blackberries and dewberries	acres	28	10	19	6	14	19	42	14
	quarts	24,765	9,136	23,518	1,414	17,835	25,452	42,080	17,020
Loganberries	acres	4	2	57	1	4	34	66	
	quarts	3,820	1,689	151,547	897	4,689	76,145	43,425	390
Orchard fruits:									
Total	bushels harvested	1,860,421	262,418	81,318	9,037	591,730	130,429	167,447	8,429,367
Apples	bushels harvested	1,771,581	223,249	63,718	7,552	505,653	91,545	88,029	6,249,950
Peaches	bushels harvested	17,532	15,820	110	6	15,291	74	43,018	926,629
Pears	bushels harvested	19,676	8,701	3,112	387	5,055	11,442	10,491	1,114,371
Plums and prunes	bushels harvested	26,924	7,358	7,943	869	61,686	14,687	17,531	95,606
Cherries	bushels harvested	24,622	7,286	6,435	223	4,010	12,678	7,836	35,403
Apricots	bushels harvested	86	4			35		536	7,404
Grapes	pounds harvested	55,760	20,935	3,712	65	228,416	2,152	7,880	1,985,238



A MODERN WASHINGTON DAIRY

CHAPTER XXVI.

Dairies and Condensaries

Milking in Pioneer Days—Gradual Progress—Dairying Now Big Business—Washington Ideal State for Dairy Business—Climate and Vegetation Just Right—Creameries and Condensaries Now Numerous—Will Be Among Foremost States for Milk Production—The Milk Condensary—Founder of Process—Great Public Benefit—Method Still Followed—Great Expansion of Local Company—Figures Tell Tale.

I cannot remember when milking cows was not a delight to me—fun, you might say, for if a hapless chum should happen to come too near he would be liable to get a squirt of milk in the eye, for I was a good shot in the game.

I hardly ever left the milk house after the milk was strained until a cup full of the precious fluid had found its way into my stomach as a padding to the breakfast that followed.

These were times when the old wide flaring shallow tin pans were in use exposing as wide a surface of the milk to the air as possible, later to be skimmed, the cream transferred to the dasher churn.

I can well remember the back breaking work when the butter wouldn't "come" and Mother wouldn't let warm water be added, to "bring it."

These, too, were times when the butter was put up in rolls of all sorts, shapes and sizes to be sent to the store and traded for sugar or salt, or maybe a bit of calico or ribbon or anything that struck the fancy of the women of the household.

Then came the deep cans of the Cooly creamer, excluding the air from the milk while the cream "rose", followed by the separator to deposit the cream in one vessel and milk in another; and finally the "creamery" where method prevailed and the dairy became a great business in the place of a "pin money" adjunct.

The dairy interest has reached great proportions in Washington where the grass remains green so long, and where the nights are always cool and where the water is so pure.

The census report of 1920 states the value of milk, cream and butter fat and of butter and cheese made on farms for the year 1919 as $27,620,231.

Receipt from sale of dairy products, $25,412,685.

Total, $53,032,916.

The State of Washington is peculiarly adapted for successful dairying and stock-raising. The climate, vegetation, facilities for transportation and marketing all combine to make it one of the most favored states in the Union for the carrying on of such industries.

The western portion of the State offers more advantages than the eastern for dairying, owing to the greater amount of precipitation which causes the pastures to remain green much longer than on the other side of the mountains, also because the climate is more equable. But in many parts of eastern Washington, especially where irrigation is carried on and alfalfa raised in abundance, dairying is a most successful industry, and that section can boast of possessing some of the finest dairy herds in the State.

Since pioneer days this industry has made most remarkable progress. In the quality of the cows, the manner of feeding and caring for them, the methods of milking and handling the milk, and the disposal of it; all have changed. Modern, scientific methods now pre-

vail over the careless, slip-shod fashion of former days. Only in isolated instances and in out-of-the-way places do we now find butter making carried on by farmers. There are either creameries or condensaries, in almost every locality to which the milk is sold by the farmer and conveyed from his door-yard by wagons provided by the manufacturing plants so that the farmer's duties, with regard to the milk, cease when he places it in the cans provided for the purpose.

The dairying industry and the annual value of its products have been increasing by leaps and bounds, and it is not beyond the range of reasonable possibilities that before many years shall have elapsed she will be among the foremost states in this line.

There are now 19 condensaries, 19 cheese factories and 110 creameries in the State.

The scope of this volume will not permit of going into minute details of the rise and progress of the milk products industry. But there is one branch that owing to a peculiar coincidence, as well as to the great importance of the thing itself, compels us to devote a little extra space to giving a brief outline of its birth and growth. I refer to the milk condensary.

It is always a pleasure to pay tribute to any man who by his inventive genius, or other exercise of unusual powers has proved himself a benefactor of the human race, even though his motives may have been other than altruistic.

In 1853, the year that this extreme northwestern portion of the United States was cut loose from "Old Oregon" and made a territory, the American, Gail Borden, applied for a patent on a process that he worked out for condensing milk. His right to be called the inventor of the manufacture of condensed milk has never been questioned, although his patent was not granted until 1856. It was for producing concentrated sweet milk by evaporation, having no

sugar or other foreign matter mixed with it. However, as early as 1856, it is known that Gail Borden manufactured sweetened condensed milk, sold under the famous "Eagle Brand" label. And by the way, who does not know what a great blessing that Eagle Brand of milk has been in nourishing infants whose mothers were unable to furnish the natural article? Physicians have asserted time and again that its use has resulted in saving the lives of thousands and thousands of little ones in the last sixty years.

Since the introduction of the process of milk condensing, invented and patented by Borden, numerous modifications of the processes, have been invented in this country and abroad. Most of these have proved commercially unprofitable and Borden's method still prevails almost everywhere.

The beginning of this infant industry—not unlike the Territory given birth at about the same date—was modest in the extreme. It took years to overcome the obstacles that usually beset a new enterprise; but about the close of the Civil War it began to get a firm foothold and ever since it has grown rapidly. Today it has upwards of fifty factories from Maine to this State, and is very strong financially.

At the present time the Pacific Coast Condensed Milk Company—a Western institution—is the largest of the kind in this State and has made wonderful progress since it first came into existence less than twenty years ago.

The total value of condensed milk manufactured in this State in 1915, was $5,618,050; in 1919, was $15,044,708. That looks like progress!

The total value of all dairy products in the State for 1915, was $19,735,694; for 1919, $39,936,441. Again, that looks like, and is, Progress.

ORCHARDS OF THE INLAND EMPIRE

CHAPTER XXVII.

HORTICULTURE

Fruit Raising Great Industry—Apple Leads All Others—Oldest Apple Tree In State—Immense Cherry Trees—Four Feet In Diameter—The Apple Tree Cultivated In Ancient Times—Phenomenal Increase of Crop in State—Washington Apples At New Orleans Exposition—Best Display—Bright Outlook For Future—Pears Raised In Great Abundance—Thrive On Either Side of Cascade Range—Excellent Peaches Produced On East Side—Industry Advancing Rapidly—Small Fruit Business Very Profitable—Recent Development Great—Considerable Grapes Raised On East Side.

The fruit business of the State has grown to be a great industry. The apple, of course, leads all other varieties and, in fact, is of greater value than all others combined.

The oldest apple tree in the State has just passed the venerable age of ninety-six years and is yet in bearing. This is a seedling springing from seed planted at Vancouver, Washington, by the Hudson's Bay Company in 1825. I have seen another at the age of seventy years planted at Fort Nisqually in 1834 by the same company; both from seed sent from England by sailing ships around Cape Horn.

The apple tree in this climate comes into bearing very early. I have had a considerable crop three years from planting—all the growth could bear up under, and in fact more. I am opposed to propping a tree and prefer to "thin out" and spare the tree. Some of my planting of thirty years ago are yet bearing. My first planting in Puyallup nearly sixty years ago gave way to make room for Pioneer Park in the City of Puyallup, else I have no doubt would still be bearing.

George H. Himes, Secretary of the Oregon Historical Society, has just sent me a "piece of wood from the last cherry tree that belonged to his (Luelling) original stock of 1847," which he has labeled "Royal Ann Cherry Wood."

These were the first grafted fruit trees West of the Rocky mountains and the beginning of the fruit industry of the Pacific Coast. I have seen cherry trees on the Indian reservations I think at least four feet in diameter. These facts demonstrate that in this climate fruit trees bear early, grow rapidly and have a long lease of life.

The apple is "one of the most widely cultivated and best known and appreciated of fruits belonging to temperate climates," and "is successfully cultivated in higher latitudes than any other fruit tree, growing up to 65 degrees N. latitude, and is generally distributed throughout the three continents of Europe, Asia and America. It has been cultivated from time immemorial. Charred remains of the fruit are found in the prehistoric lake dwellings of Switzerland" (see illustrations Standard Encyclopedia of Horticulture, Volume 1, page 312). Now widely cultivated and immensely variable, the apple is grown in every temperate climate and is probably the most important commercial fruit of any variety.

While writing of the apple, my mind harks back seventy years ago to "Old Indiana Days" of the apple parings; the quartering and stringing of the apples to hang up to dry; to the apple butter, the tart, the apple pudding, and not forgetting the apple pie, and above all the bright-eyed, rosy cheeked girls—veritable sprites in the eyes of a lusty youngster of twenty; sprites that played on the loom instead of the piano, made music on the spinning wheel as well as on the guitar and cooked as palatable a meal as could be obtained at Delmonico's. But I must have done with this and get back to Washington State and down to something of our present day doings.

In a bulletin of the 1920 U. S. Census report just received, under the heading of "Farms and Farm Property for Washington, Table 39, we find a summary of the apple crop valued for 1909 and 1919: "Year 1909, 2,672,100 bushels, value $2,925,716; 1919, 21,568,619 bushels, value $38,823,641."

Thus it will be seen during the decade from 1909 to 1919 the value of the apple crop of 1919 is approximately ten times the value of 1909 and three-fourths the value of all the fruit crops of the State.

As before indicated, there is something in the air, the climate, or the soil, or all three, of Washington to produce the apple to perfection. I have long felt this "in my bones" as the saying goes, but I did not expect to live to see the industry reach so great a world wide importance as has come within the last decade.

Thirty-five years ago (1885) Governor Squire appointed me as commissioner to the second New Orleans Exposition and in his letter proffering the appointment said there were no funds to sustain the work, but he would recommend an appropriation when the legislature met, which would be after the exposition opened.

I accepted the appointment, issued circular letters to the effect that I would contribute my time and personal expenses, but would not pay or promise to pay one cent for exhibits; but would receive, transport and install such as would be contributed and gave a schedule of what was wanted.

There was instant and universal response, and figuratively speaking, we were soon "covered up" with exhibits. Among these were a large quantity of fruit, particularly apples, I think over forty varieties.

Now for the sequel. The exposition management offered diplomas for the best plate of fruit of any varieties exhibited. Fifty-five awards were made, of

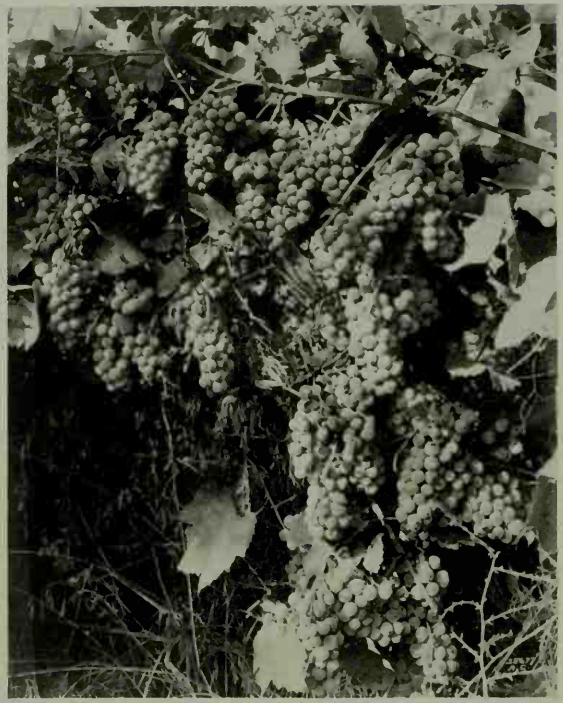
which Washington took thirteen first and two second class. Nine States had exhibited. All agreed the awards were fair; that Washington had the best display of apples in the exposition and was entitled to the diplomas. I then and there in broad daylight had a dream. I dreamed some day Washington would come to the front as a fruit producing State whenever we could get transportation to reach distant markets. The dream has come true; it is, however, only partially fulfilled; the census report shows we produced nearly fifty million dollars worth in 1919, to be exact, $47,827,647 as against $4,244,670 in 1909.

Now that we have great steamer lines from Puget Sound, recently established, to Europe and the Atlantic seaboard through the Panama Canal, and soon will have free tolls, which means cheaper freight to our eastern coast and Europe. I will dream that if I live that long, at the end of another decade, I will see a hundred million dollars worth of fruit shipped out of Washington in the year 1929.

Every cloud with its silver lining must have a dark ground. European nations have been killing off men faster than children are born; the art of printing has reached a period of perfection; paper money is manufactured day and night. Until Europe recovers from her madness, we may not reasonably expect a speedy recovery and consequent normal trade; but it will come in time, to insure a bright future for the fruitage of Washington.

PEARS

There are varieties of pears that I would choose to satisfy my craving for fruit before any other kind; but this does not continue as with the apple. Nevertheless, we seek a variety, and pears are one link in the chain of fruit luxury, I should say necessity, for if we want continued good health, we must have fruit as a part of our diet.



THE LUSCIOUS GRAPE

PEARS

Did you, dear reader, ever notice the class that lived on what we used to describe as "Hog and Hominy" diet—that had a certain sluggish movement—a little dullness in the eye and maybe in the whole head—fat and good natured, but not famed for intellectual achievements. I have seen some such.

We feed our pigs corn because we want to fatten them; but we don't want to raise our children on the same exclusive diet. We want our youngsters to have that which will brighten the brain; keep the whole system in good working order and develop the normal man or woman intellectually as well as physically.

I firmly believe that the universal fruit eating habit of our people in Washington has largely contributed to place the State on the enviable pedestal of health reports as shown by the statistics.

I did not wait to dig out the stumps before planting my first orchard and one-fourth of it was pear trees; that was sixty or more years ago. In two years we had a "sprinkling" of fruit; the third year all we needed and the fourth year abundance and a lot to spare. I verily believe the regular eating of fruit has prolonged my life (now past ninety) and kept mental clouds off my mind.

The remarkable record develops the fact that not a single county of the State (thirty-nine in all) fails to show pear culture; large local consumption, however, very materially reduces the shipments to distant markets, and hence, a less aggregate value shown in the tables of statistics. This fruit thrives on both sides of the Cascade Mountains.

There is not a county in this State without its fruit orchards and plenty of fruit for the youngsters and in the aggregate, as shown on another page, near fifty million dollars worth to spare the last year, reported (1919).

The U. S. Census for 1909 reports the production of pears in Washington at 310,804 bushels, of a value of $328,895, and for 1919 1,728,759 bushels, at a value of $3,025,331.

The trend of pear culture, as with many other varieties of fruit, is toward the Pacific Coast States. Washington is keeping up with the procession, as will be seen by the preceding figures, showing the crop output has more than quadrupled in a decade with 183,346 trees reported as of non-bearing age.

The total value of the fruit crop of the State, including almonds and English walnuts, is given by the census report as $4,274,124 for the year 1909, and for 1919 $47,827,647. The three leading fruits, apples, pears and peaches, in 1919 produced the sum of $45,170,521, the remainder by plums, prunes, cherries, apricots, figs, grapes and nuts as noted.

THE PEACH

Next to pears in quantity produced, the peach is a close second, but exceeds the pear in aggregate value of the totals of the two.

The exact figures given us by the census report is, for the State 84,494 bushels in 1909 and 1,544,859 in 1919. The values for these respective years is for the crop of 1909, $1,925,761, which is increased to $3,321,449 for 1919.

The output of each most important fruit is shown by tables of the counties of the State. The careful reader will note that while but one county fails to report any peaches grown, many show a nominal output, the bulk of the crop is grown in the four counties of Yakima, Chelan, Spokane and Walla Walla, all east of the Cascade Mountains, commonly known as the Inland Empire.

A BERRYFIELD OF WASHINGTON

The quality of the peaches of Washington competes favorably in the markets with those from other States and doubtless the quantity will be largely increased in the immediate future by the 50,254 non-bearing age trees reported.

SMALL FRUITS

E. C. Mead in 1885 sent east for a few blackberry roots of an improved variety and planted them on his farm near Sumner in the Puyallup Valley. He soon began to market the product locally and later at nearby cities of the State. This was the foundation of a business that has assumed large proportions. The variety became locally known as the "Mead Blackberry" and later as the "Snyder."

I had, at the time, a blackberry vine without name —probably the evergreen, growing in my garden with a stalk as big as a ten year old child's wrist, that measured exactly two rods in length. I managed to take this with me and exhibit it at the New Orleans Exposition, mentioned elsewhere in this volume. The quick growth and enormous yield soon demonstrated the possibilities of this combination of soil and climate to produce small fruit on a large commercial scale culminating, in the last government report received, in the "farm value" of $3,490,388 during the year of 1919, and which was largely increased in 1920. The canneries, of course, report a much larger value, including cost of cans or other containers, labor, sugar, transportation, etc., probably in all double the farm value.

The census report for 1919 shows the production of small fruit in the State is as follows:

Strawberries	6,377,368 quarts
Raspberries	4,599,678 quarts
Blackberries and Dewberries	3,691,065 quarts
Loganberries	1,157,778 quarts
TOTAL	16,884,745 quarts

The rich alluvial deposit of the numerous river bottoms described in the photographic copy of "Western Washington," reprinted in this volume, shows a large aggregate acreage of this land, all, or nearly all, suited for small fruit culture, besides a larger acreage in the aggregate of the logged off lands; though much of this is not suited for such crops.

There have been marvelous results in recent years and the industry, growing apace, has become one of the great staple crops of the State.

A little bit of pioneer reminiscences of a third of a century ago may not be uninteresting to strangers and would-be berry growers, now embarking in small fruit culture as a commercial venture.

October 9, 1887, I published in the Post Intelligencer of that date, under the heading of "Farm and Home," a letter from T. F. Patton, from Alderton, Puyallup Valley, in which he wrote:

"I set out my first blackberry yard in the year 1876, and have had very good success until this year. From some cause that I don't understand, my yard appears to have a blight that seems to make its appearance first on the top of the bushes, and extends downwards until the whole bush dies, even after the fruit has formed. The consequence is I have only about one-third of the usual yield.

"I will give my success for last year; I had near two acres in berries. I sold enough berries to buy 600 pounds of granulated sugar and made two hundred gallons of wine, besides having enough for ourselves and supplied several neighbors. The wine was sold for $1.25 per gallon, by the barrel. I think enough was sold to neighbors to pay all the expense of picking, so the profit would appear to be $125.00 per acre net. The wine gives very good satisfaction, and is pronounced by good judges as splendid. I have made 180 gallons this year, notwithstanding the blight."

AN OVERLOADED BRANCH—APPLES

THE PEACH

Of course, my good friend has gone where wine making is not practiced. Neither if he were yet here could he make wine from his berries, but he could doubtless get more money from his crop, to be made into jam, or shipped thousands of miles in their fresh state, which at that date he could not do.

I wrote and published in the same issue that "We have repeatedly made the assertion that blackberries could be produced pound for pound, nearly as cheap as potatoes. The blight mentioned by Mr. Patton is new. In all our experiences of over thirty years, we have never had a failure. They used to grow so vigorously on the home farm (Puyallup) that two rows supplied us with all we could eat and more, too, with upright stocks of such vigorous growth that in one case there was a lateral nineteen feet. A single hill in the same row produced 21 pounds of berries at one picking. What we want is more small fruit—enough to make a cannery possible."

GRAPES

In the eastern division of the State, grapes of excellent quality are produced and marketed. The production during the decade ending in 1919 has increased from 1,704,025 lbs. in the year 1909 to 3,961,036 in 1919 with an increase of aggregate value during the respective years from $51,412 in 1909 to $316,882 in 1919, thus showing the culture to have been profitable and will doubtless be largely increased as the country is settled and developed.

CHAPTER XXVIII.

BEET SUGAR

Inception of Industry Last Century—Beet Sugar Not Inferior to Cane—Large Area of State Suitable for Sugar Beet Culture—More Beet Sugar Used Than Cane—Process of Manufacture Described—Expansion of Industry Assured—Inland Empire to be Beneficiary—Irrigation Will Accomplish the Grand Result.

In old Indiana days we young folks used to have gay times at the sugar camps, sometimes dancing on Mother Earth till the wee hours of the morning while the pot boiled and boiled till the sugaring-off time came.

Here in Washington we have not had the sugar camp for the reason that we have no sugar maple from which to draw the sweet sap.

A little over a hundred years ago, Napoleon, as a war measure, encouraged French chemists to discover the way to produce sugar from the beet by giving large subsidies and from these efforts the problem was solved by demonstrating the practicability of drawing sugar from the soil through the medium of the beet as well as the cane and maple tree. Finally it has come about that over half of the sugar of the world is produced from the beet.

A wide popular opinion prevails that beet sugar is inferior; that its sweetening quality is less than cane; that an offensive flavor remained with the sugar in spite of all efforts to remove it. Chemists have demonstrated time and again that beet sugar is identical with cane sugar. By improved processes of manufacture all impurities are now removed and not the faintest trace of an offensive odor remains. Scranton's

International Library says, "The term sugar at present, in a general sense, is reserved almost exclusively to denote crystalized sugar from the tropical plants and the sugar, whether derived from the tropical cane or the sugar beet, is almost pure sucrose."

Washington State possesses suitable soil and climate for the production of the beet in quantity sufficient to supply the United States with all the sugar required by the hundred million of people in the nation.

A quarter of a century ago the author investigated the question as to the feasibility of establishing this industry here in Washington by visiting several sugar factories in Germany and the then recent factory in Alvarado, California. We found that the beet grown on soil west of the Cascade Mountains was singularly rich and pure, but for climatic reason endangering a second growth, destroying its sugar producing quality before the crop could be harvested, it was not feasible to produce sugar from the beet on a large scale in the warm moist autumns of Western Washington. Beets grown in the eastern portion of the State were proven even richer in sugar, but not so pure. Subsequent to that date (1885) improvements in the process of manufacture has enabled the manufacturer to cheaply remove this impurity and to demonstrate beyond all question that sugar can be produced in the region we know as "The Inland Empire", Eastern Washington, to compete with any district in the nation. This is abundantly proved by the successful operation of several large factories in the region referred to.

During the year of 1918-1919 the production of refined beet sugar in the United States as reported in the year book of the United States Department of agriculture for 1918 was, for the continental division 740,100 short tons (of 2,000 lbs.). Louisiana produced during the same period 263,450 short tons, "chiefly

raw", and in all other states 3,500 tons, a total of 266,950 tons of sugar from the cane as against 740,100 tons from the beet.

It is interesting to note the rise and progress of this great industry beginning seventy years ago with a production in the United States of 448 tons of beet sugar and ending at the period just named in a gain of annual production of nearly seven hundred thousand tons the greater and constantly increasing gain beginning with the present century.

The memories of the old time sugar camp remain as "a joy forever", in the mind of the author who wields his pen at the age of ninety, when, after the hard day's work of gathering the sap, the night work came on with its gaiety of the assembled youngsters. The sap *would* run when the weather was favorable and wouldn't wait and so the day gathering must be got out of the way before the next day's supply came.

Of course there was a great deal more than mere fun for the youngsters in the production of maple sugar. Sugar was scarce and high priced; all except that produced from the maple tree was shipped up the Mississippi and hauled in wagons from the Ohio River to Indianapolis near where the author then lived. I can remember when in extreme cases a bushel of corn would be exchanged for a pound of sugar—corn 15 cents a bushel, sugar 18 cents a pound, when measured by money, but the scarcity and high price of money drove many to barter and trade. These were times when farm hands worked for from eight to twelve dollars a month and fifty cents a day was considered fair wages.

Three years ago, during the great war, I planted a few rows of sugar beets in my Liberty garden and made some syrup over the kitchen fire, from the product following the directions given in a bulletin, issued by the U. S. Agricultural Department of Washington, No.

823, giving in detail how to proceed, from the raising of the beet to the deposit of the syrup in suitable vessels for safe-keeping.

Any one can get one of these bulletins free by applying to the department or examine one at their local library.

The process is simple: Slice the beets thin, soak for an hour in hot water, boil down to the consistency wanted and place the product under seal till used; be sure and skim carefully while boiling; by boiling long enough one can get sugar of dark color. A rod of ground will easily yield three bushels of beets; a bushel of beets will produce in syrup the equivalent of eight pounds of sugar. I have raised beets that yielded twice the amount stated above and have had beets at least 20 per cent richer, hence a statement that one can rely on producing the equivalent of 25 pounds of sugar to the square rod, 4,000 to the acre, is not an exaggeration.

There are several million acres of land in the State suitable to the production of the sugar beet when water is supplied to irrigate.

By reading the chapter on water power in this volume, where the possibilities of supplying water is outlined, the reader will not need to draw on his imagination for visions of the future, for the history of what has been accomplished is a safe guide to judge the future.

With an aggregated potential water power, greater than any other state of the nation, to make possible the irrigation of the higher levels by pumping; with the millions of acres of suitable soil, coupled with a favorable climate, the future expansion of this industry is assured and with it the great future of the Inland Empire of Washington, once referred to as a part of the "Great American Desert" by uninformed statesmen of the past.

CHAPTER XXIX.

LOGGED-OFF LANDS

Mostly In Western Part Of State—Character Dissimilar—Some Excellent—Some Worthless—Big Trees Don't Indicate Rich Soil—Improved Methods of Clearing Land Now Being Employed—Numerous Settlers Now Upon Such Lands—Years Of Personal Experience With Logged-Off Lands—Large Portions Can Be Profitably Cultivated.

That part of the State lying West of the Cascade Range of mountains is a timbered region, of varied soils, graduating from the very richest to be found anywhere on the earth's surface to the poorest imaginable—some of it not even fit for "Goose Pasture," as the Western phrase goes, meaning of no value for agriculture.

As will be seen in the chapter on lumber, this region jointly with Western Oregon and British Columbia, is the timber storehouse of the world, and of the cone bearing evergreen species, hence the name "Evergreen" State as now so widely applied to Washington.

A popular fallacy has pervaded the minds of many that where such tremendous growth of timber is produced, the soil of necessity must be rich. Such is not the case, although there are areas of rich soils where the evergreen timber grows, but is not produced from the soil. The fir, or in fact, any of the evergreen cone-bearing timber when burned leaves but a small percentage of ash. The growth is not from the soil, but is from the surrounding atmosphere and moisture. The evergreen casts no leaf in autumn like the deciduous growth that annually returns a part of its nourishment drawn from Mother Earth.

Widely distributed and in the aggregate of large areas through this region are river bottom alluvial deposits and marginal tide lands adjacent to Puget Sound and Grays Harbor of great value for agriculture; but it is of the logged-off lands, the hill lands to be considered in this chapter.

In the early settlement of the territory sixty or more years ago, and I may say later, in this State, these lands were shunned and looked upon as worthless for agricultural purposes—appalled by the herculean task of clearing ready for the plow by individual effort.

Latterly by the use of powder to shatter the stumps and the application of steam power, with cables to draw to a selected center and derricks to lift the broken pieces and swing to points where cone piles have accumulated up twenty feet high or more, the task has not seemed so discouraging; in a word, by machinery, the land may be profitably cleared where by the individual effort it could not be done.

Notwithstanding the handicap in cost of clearing we find a large population settled upon these lands—upon the more favored portion—but the greater portion is left as the logging crew had abandoned it, apparently to be treated as waste land.

Having had over forty years' experience as a farmer within the borders of this territory and state, in close proximity to these lands described, and having had my "fingers burned" in an attempt to clear some of it with a keen experience of loss, I may be pardoned in saying that I am writing from the book of experience that taught me caution. Nevertheless, I sincerely believe, and may I not say know, there is a great future value in a part of these lands if systematically selected and improved in accordance to what they are best fitted for.

It required thirty years of persistent agitation accompanied by object lessons of individual effort to con-

vince the people that the nation would be benefitted by the irrigation of our arid lands and that it could best be done in a large way by the Government, either by the state or nation and in a way that would cost the Government in the long run not a dollar—simply using its credit. This at least is being done to an extent under the Cary Act, which we know is the forerunner of greater projects.

The amazing results of this irrigation work has convinced the most incredulous of the wisdom of this movement of reclamation really begun in earnest less than twenty years ago. Here was a vast area of land almost worthless as it lay, but by the touch of water becomes the most productive soil of any on the continent—where once the desert, drear and parched, prevailed, now smiling farms, gardens, and orchards, beyond all dreams of the enthusiast, occupy the land, yielding thousands upon thousands of carloads of product of an aggregate value of $250,000,000, the particulars of which may be seen elsewhere in this volume.

What is true as to the result of irrigation of our arid lands in the eastern portion of the State may become true by application of the same principle applied to the logged-off lands of Western Washington in a region extending near two hundred and forty miles from the south to the north boundary of the State and of near a hundred miles in width. After deducting the water area of Puget Sound and river valley with here and there prairies, the timber area that will come under the description of logged-off lands is nearly, if not quite, as large as the arid area of the Inland Empire of Eastern Washington previously described.

Thus it will be seen that there is a vast work before the generation to come. It is a work that ought to be undertaken by the Government, not in the spirit of paternalism but because it can be done by the government in a way for the greatest good to the greatest number, impossible to accomplish by individual effort.

First there should be a careful survey of a given area to determine what land should be cleared and what should be reforested; second, clear only such as is fitted for agriculture; third, clear only such land where the title is transferred to the Government at a valuation to be agreed upon; or by condemnation of unoccupied tracts by valuation.

Fourth, after the land is cleared ready for the plow, to be sold in suitable tracts to home builders only, who must reside on the tract, at a price to cover the cost of the clearing and added appraised value before clearing, on long time payments and low interest.

Fifth, reforest such portions as are unsuited for agriculture. If the reader will refer to other chapters in this volume where the rapid growth of timber in this moist mild climate is shown, he may well conclude with the author that with a proper system of reforestration, the supply of timber may be continued for the use of countless generations to enjoy without limit of time.

This last is most important, as it can not be done otherwise than by Government action. The continued welfare of the nation, of future generations, is dependent upon such action. The time is not far distant when, with the present wasteful system, or rather lack of system, our timber resources will be exhausted and the nations of the world will suffer with us; for it can be truly said this is the timber storehouse of the world. Sixty-eight years is a long time in the life of one man but is a short time in the life of a nation. I have lived here these sixty-eight years within the borders of this territory and state and have seen wonderful results in limited areas of nature's efforts to repair the damages inflicted by the hand of man. In that period I have seen stately trees grown from tiny saplings to three or more feet in diameter and one hundred and fifty feet or more in height, a thing of beauty and of value. Thirty-two years ago I

planted on my grounds at Puyallup a "Sequoia Washingtoniana" (popularly known as the "big tree of California") a sprig not bigger than my thumb. Recently I put a tape line around the base of it to find the tiny sprig had grown to be fifteen and a half feet in circumference and still growing lustily. The curious may see this tree growing within the bounds of the thriving city of Puyallup.

I once tramped from Maidstone, England, to Tunbridge Well, and there first saw the beautiful holly that in places lined the roadside. I thought it was the most beautiful sight I had ever seen, and upon my return home straightway planted holly. I remember particularly one of these in fifteen years had reached the height of thirty feet with a dense foliage from the ground up, the horizontal limbs extending fifteen feet, the top a single tip, thus forming a perfect pyramid as beautiful as anything I saw in England. And why not? The climate of Western Washington is much the same as that of England—an ideal climate for the growth of timber nearly the whole year round, and the holly tree grows here in as great perfection as any I saw in England.

CHAPTER XXX.

IRRIGATION

Beginning of Irrigation in State—Wonderful Progress Made—The Face of Nature Changed as by Magician's Wand—Essential to Assure Good Crops in Eastern Portion of State—Coming Into More General Use in Western—Future Results Will be Marvelous—Table of Crop Returns.

No region of the world, according to men who have made a life-time study of agriculture and horticulture, has a wider spread of production from its soil than has the state of Washington. In some measure this is due to climatic and meteorological conditions, with the lofty Cascade range dividing the state into two sections, distinct in considerations of temperature and precipitation. As a geographical division it is a happy one through the variety of resources and industries to which it contributes, and in realizing the possibilities along such lines there is call for a co-operation and common spirit of progress that will permit no political or civic division to parallel the topographic demarkations effected by the mountain crests.

Due to the climatic range thus indicated, agriculture in the state has a wide scope, from the imperial wheat fields of the Inland Empire in the eastern section and the great grazing grounds of cattle and sheep, to the intensive culture of small fruits on the western slope, with truck gardening and dairy industries tributary to the large city markets and the industrial plants that have installed processes of condensing the milk and preserving the fruits on a colossal scale. Between the extremes of the grain ranch that covers sections, and the berry or truck tract that may be limited to an acre

there lie tracts where fortunes await in apples, peaches, plums and pears, where alfalfa and clover and timothy thrive as basis of stock feeding, where money is made from poultry and bees as side-lines or as independent undertakings, where culture of every kind of vegetable is successful; or where variety is realized in its possibilities by combination of root crops, grain and forage with poultry flocks and dairy herds, and fruit trees for what has been called "three-story" farming.

In the records of what has been accomplished by Washington agriculturists, one of the greatest chapters, probably the one of most compelling interest, has to do with the magic of water.

For centuries, during the Dark Ages when shadowed men in cloisters were keeping alive the spark of learning that was a heritage from the classic era, there was unremitting quest of the "philosopher's stone", the mysterious element by which it was thought the baser commodities might be turned into gold. The purpose was foiled, however much the toil may have found reward in the beginnings of chemistry. Yet for ages, in the greater laboratory of out doors, Nature had been fulfilling the conditions by which the men of our day have turned the silver of the mountain stream into the gold of grainfield and orchard to be translated into command of the precious metal that is the basis of finance and the measure of prosperity.

Ground by glacial ice, carried by tumbling torrent, laid by lakes which later disappeared, the rocks and layered lava of the mountains found their way downward to form the soil where the still-living streams can be brought to build the garden spots of the world.

Old as the civilization of the semi-tropics where it was first practiced, irrigation has reached its highest development in the temperate zones of Washington, where it has set the agricultural and horticultural standard for the world.

Along the rivers man has always made the beginnings of his husbandry. In the eastern states the first settlers sought the rich loam of the bottom-lands, and only when the supply of these had been exhausted did he turn to the upland prairies and break the sod where today the productive farms of the Mississippi valley and its great tributaries are flourishing. Still relying upon distributed rainfall and without recourse to irrigation they have found such lands among their richest, and may look back with wonder on the belief of the pioneers in that region who thought that a farm must be cleared amid the woodlands along the streams, skeptical of any value in the expanses of prairie.

Where irrigation has flourished, it likewise had its beginnings along the rivers. It may be debated whether this was due to the requirements for bringing water easily and cheaply on the land, or whether the settlers followed the traditions of earlier generations, and incidentally found their locations favorable for undertaking irrigation where rainfall proved inadequate. At any rate the first reclaimed tracts were covered by comparatively cheap and easily constructed ditches, and only when such lands were all taken was there felt the need of larger undertakings, which by long and elevated canals, flumes and tunnels, could bring water long distances over high-level lines to reclaim thousands of acres in a single system.

Once inaugurated, irrigation in the state proved its value indisputably, and on many a project the entire capital investment originally made has been equalled or exceeded by the returns from a single crop, winning for the state of Washington prestige as a world-leader in reclamation practice and returns.

The beginnings go back more than a century. John Clark, a member of the Astor party is credited with the role of pioneer, having planted a crop and irrigated land on the lower Spokane as long ago as 1812. Dr. Marcus Whitman irrigated land at the mission near

Walla Walla as early as 1837, and the newcoming settlers who took up the lands of the river bottoms followed the example that had demonstrated its success and advisability.

The first canal was constructed in the Yakima valley in 1874, turning attention to the possibilities of larger projects. In 1890 the Sunnyside canal was started under the direction of the transcontinental railroad, the Northern Pacific, which recognized the importance of advancing agriculture as a source of commodities for transportation.

By this project water was diverted from the Yakima river, and carried along the east side by the canal which ultimately reached a length of sixty miles. It involved branch canals and laterals aggregating five hundred and fifty miles, and irrigated an area of 40,000 acres.

When the federal reclamation service was established by enactment in 1902, the Yakima valley was one of the first localities to be investigated, and the Sunnyside canal system was acquired by the service as part of its larger program. Approximately 300,000 acres in the Yakima valley are included in the areas now under irrigation, with 208,000 acres yet to be reclaimed by the Indian service and the United States reclamation service with the co-operation of the Washington State reclamation service. The system includes reservoirs in the mountain lakes and meadows with an ultimate storage capacity of 927,000 acre-feet—or enough to cover nearly a million acres to a depth of one foot of water.

The annual crop return from the tracts under irrigation in this valley is estimated at from $45,000,000 to $50,000,000. It has attained a figure more than one hundred per cent greater than the original cost of all the irrigation works.

Nearer the Cascade Mountains, in the same valley, known in its upper portion as the Kittitas, private enter-

prise has put under irrigation approximately 72,000 acres, and another 70,000 is to be reclaimed by what is termed the high-line project, which has been undertaken with state and federal assistance. This district is on a par with the earlier-developed Yakima lands in productivity and prosperity.

Another district of world-wide reputation is the Wenatchee country, the fame of whose apples has gone all over the world. Besides the country immediately tributary to Wenatchee, the name has come generically to include the "North Country", up the Columbia river from the city—the Lake Chelan, Methow, and Okanogan districts. In Chelan county alone the watering of an additional twenty thousand acres in fifteen years has raised the taxable wealth from $1,200,000 to more than $22,000,000—a concrete illustration of what reclamation means as an agent in advancing prosperity.

One of the principal projects now under way is the Methow-Okanogan, by which water taken from the Methow river is to be carried by tunnel through the divide to the Okanogan valley, reclaiming thousands of acres on the bench high above the Okanogan river itself as it flows to merge with the current of the Columbia.

This work is under supervision of the state service, and the land settlement commission has undertaken a program of supervising the placing of land on the market as the larger tracts in present holdings are sub-divided according to requirements. This supervision is to eliminate the speculative feature, and insure the actual settlement of land by the purchaser to whom it gives protection in his industry for its profitable improvement.

Among the many other localities where irrigation has been established by great co-operative undertakings are Kennewick and Pasco, Walla Walla, Spokane, White Salmon and Okanogan, the last-named being one of the most typical projects of the federal service.

Even on the Olympic peninsula, in the Puget Sound country, irrigation has been applied in the Sequim district, where those who have tested it say it means two or three crops of hay instead of one from unirrigated land and has multiplied the value of acreage from sixty to a hundred fold; also at Yelm, near Olympia, with marked results.

Large crops are produced in the river bottom lands of Western Washington without irrigation. The result from the cultivation of the logged-off table land is not so satisfactory except where irrigation is practiced. I have had experience in this and know it is important; irrigating such land has nearly or quite doubled the yield, improved the quality of products and reduced the cost.

When the fact so abundantly demonstrated is considered, that such land can not be prepared ready for cultivation at less than from two to three hundred dollars an acre and that irrigation would not cost anywhere near that amount and would approximately double the yield, improve the quality and provide certain crops, the question of irrigation would not be long delayed.

In all the present irrigated area of the state amounts to 546,000 acres, with 30,000 more in projects now under construction. The aggregate acreage susceptible of reclamation is about 2,650,000 acres. Naturally the costs of putting water on the land will be higher with the latter projects, as they involve greater engineering undertakings, the less arduous enterprises having been the first to attract favorable attention and action. But they have served their purpose in demonstrating the rate of return that can be assured, and giving warrant for the greater expenditure that may be involved in the projects yet to be carried through.

Of the latter, the one proposal that overshadows all others, and is without doubt the greatest ever submitted to the attention of the United States reclam-

ation service is the Columbia Basin project, which contemplates the irrigation of 1,753,000 acres in Adams, Franklin, Grant, Spokane and Walla Walla counties, taking the waters of the Pend d'Oreille, or Clark's Fork of the Columbia, through concrete lined canals, tunnels, artificial and natural lakes for a distance of 130 miles from the site of the diversion dam to the beginning of distribution. The lands to be covered are bounded on the west by the Columbia river and on the south by the Snake river as it flows to join the Columbia where the latter turns westward to form a boundary line to its mouth between Washington and Oregon. The entire basin, according to geologists, was in past ages the bed of a vast lake, which later receded to the Pacific, leaving a layer of rich soil, but in a locality now so arid that it supports little but sage-brush growth until water is brought by canals or artesian wells to reclaim it.

The entire tract lies in almost level prairies, with southern slopes, with coulees that provide favorable drainage and facile irrigation. The maximum elevation is 1700 feet with an average of 400 feet at the Columbia river, with long days of continual sunshine during the growing season. Immunity from frost is assured under such conditions.

Transportation is already available by five railroad systems and by the river boats on the Columbia and Snake, the government having built large locks at the Cascades and at Celilo.

Climatic and soil conditions are pronounced practically the same as in the Yakima valley; according to the official surveys they are even superior in many respects because of lower altitude and southern slope. But assuming them to be on a par, the figures of yield in the Yakima region as a basis under irrigation show crops as follows: wheat, 50 to 64 bushels an acre; corn, 60 to 70 bushels an acre; alfalfa, 6 to 7 tons an acre; sugar beets, 15 to 25 tons an acre; potatoes, 10 tons

an acre. With an area in the project six times that of the reclaimed lands in the Yakima valley, the annual crop yield should run from $250,000,000 to $300,000,000 when full development is reached.

Taking into consideration the lands above the irrigable line which could still be utilized for grazing, there are untold possibilities for such an undertaking as stock-feeding. Furthermore, the area lies tributary to three great shipping centers that form points of a triangle around it—Spokane, Puget Sound ports and Portland. Range cattle shipped to these markets could be taken to the feed yards on ranches in the Columbia Basin, and fattened for market, just as is now done in the corn belt of Iowa and Illinois tributary to the Chicago and Omaha stockyards, and would soon develop into one of the most profitable industries of the west. From the ranges of Washington the cattle and sheep could also be driven to the feed yards, and this step would place on a business basis an enterprise that must always be more or less of a gamble while the stock are left to range in the winter; if the stockman wins by bringing a fair percentage through the winter he makes immense profits; if the season is severe and the food supply on the grazing grounds fail he faces bankruptcy. The farmer of the Mississippi valley achieved independence when he learned to "market his corn on four feet" and the agriculturist of the western states may take a leaf from this book.

Another correlated possibility that figures heavily is that of waterpower. The aqueduct system has been planned to permit utilization of many drops in level for development of the potential energy, while close at hand on Priest Rapids in the Columbia river is the site of a great project under consideration. Cheap electric power would permit irrigation by pumping on thousands of acres just above the level that could be reached by a gravity system. Electric power in ample quantity and at a cheap rate would not only extend the reclaimable acreage, but would also assure

modern service and conveniences for the residents of the imperial tract within the boundaries of the project.

If it be accepted that agriculture is the basic industry on which all other prosperity is built, it can be seen what the addition of more than a million and a half acres to Washington would mean. In the comparatively small farms which prevail under irrigation, there would be a vast increase in population, to provide a market for the manufacturing and commercial houses of the state, with so many more customers to be reached with all the advantage of freight differentials favoring the maker of Pacific Northwest products.

Completion of the project would add hundreds of millions to the assessed valuation of the state, permitting advance in public improvements and in public service at lower rates of levy than have yet prevailed. This civic benefit would accompany the increasing market demand for every commodity, from the simplest necessities of life to the best and most justifiable luxuries.

"The problem of prime importance," says the report made by the Columbia Basin Survey Commission of the State of Washington, "is to place upon the land the actual tiller of the soil. He must first of all be of the home-building type, for experience on other reclamation projects has shown that the man who accomplishes the most in the development of an irrigated tract is the man who lives on that tract.

"All published records of production, regardless of what part of the world is being studied, and regardless of the nature of the crop being produced, show that the smaller tracts average a higher output per acre than the larger tracts. The United States reclamation records show that the forty-acre tract produces very much more per acre than the quarter or half-section. The small tract is almost invariably cultivated by its owner. No hired labor ever puts the careful attention upon the land that the owner does. This is another

way of saying the smaller tract receives more thorough cultivation, and this is required fully to develop the possibilities of the soil.

"Again the owner who is making his home upon the land will oftentimes foresee and avoid conditions which might be neglected by the non-resident owner or the tenant-farmer to the detriment of production. By living upon the land, the owner insures the productivity of his farm, and remains there as a permanent settler; whereas, the non-resident owner or the tenant may fail to make a profit and sooner or later the land passes into other hands. Every effort should be devoted to securing settlers upon the land who are of the home-owning type. If the irrigable area were divided into forty-acre tracts it would make homes for 44,000 families. This is equivalent to an increased population on the farms of 200,000.

"The annual increase of population in the United States rural districts is 600,000. To keep this increase on the farms would require 100,000 new farms each year, a condition, which, since there are no more free homesteads, cannot be met. The demand for land is so great, and the available lands that offer a reasonable chance for agricultural success are so scarce, that the Columbia Basin project will be settled as rapidly as water is available for the several tracts.

"If the entire fifteen million acres of remaining irrigable lands in the United States are reclaimed, the natural increase in farm population would settle that area in four years. It is therefore impossible to develop irrigable tracts in excess of the demand, and the future offerings of satisfactory lands will be immediately settled and brought into production."

The following detailed figures on the 1918 crop returns of developed irrigation projects in the state of Washington, and on the new projects under construction or consideration, have been furnished by Harry F.

Giles, deputy commissioner of the Washington state bureau of statistics and immigration:

1918 CROP RETURNS

Developed Projects	Area	Construction Cost	Value Raw Land	Value Improved Land	Value Annual Crop
		$105	$7	$200	$60
Tieton	32,000	$3,360,000	$224,000	$6,400,000	$1,920,000
		$60	$7	$200	$75
Sunnyside	100,000	$6,000,000	$700,000	$20,000,000	$7,500,000
		$35	$8	$175	$70
Wapato	60,000	$2,100,000	$480,000	$10,500,000	$4,200,000
		$100	$8	$250	$150
Yakima (Private)	20,000	$2,000,000	$160,000	$5,000,000	$3,000,000
		$75	$4	$175	$60
Kennewick	11,000	$828,000	$44,000	$1,925,000	$660,000
		$100	$4	$200	$100
Okanogan (Govt.)	10,000	$1,000,000	$40,000	$2,000,000	$1,000,000
		$100	$2.50	$200	$90
Okanogan (West)	10,000	$1,000,000	$25,000	$2,000,000	$900,000
		$60	$4	$200	$90
Whitestone	9,000	$540,000	$36,000	$1,800,000	$810,000
		$30	$4	$200	$90
Salmon, etc.	4,000	$120,000	$16,000	$800,000	$360,000
		$65	$4	$200	$90
Pleasant Valley	2,000	$130,000	$8,000	$400,000	$180,000
		$65	$4	$400	$300
Brewster	1,300	$845,000	$5,200	$520,000	$390,000
		$50	$4	$200	$75
Methow and Trib.	10,000	$500,000	$40,000	$2,000,000	$750,000
		$30	$4	$225	$200
Pumping (Okanogan)	2,000	$60,000	$8,000	$450,000	$400,000
		$100	$4	$400	$200
Chelan	5,000	$500,000	$20,000	$2,000,000	$1,000,000
		$50	$4	$450	$200
Entiat	3,000	$150,000	$12,000	$1,350,000	$600,000
		$30	$4	$225	$200
Orondo	1,200	$36,000	$4,800	$270,000	$240,000
		$100	$4	$700	$500
Wenatchee Projects	25,000	$2,500,000	$100,000	$17,500,000	$12,500,000
		$30	$100	$400	$140
Walla Walla Projects	17,000	$510,000	$1,700,000	$6,800,000	$2,380,000
		$80	$5	$175	$75
Kittitas	60,000	$4,800,000	$300,000	$10,500,000	$4,800,000

Developed Projects	Area	Construction Cost	Value Raw Land	Value Improved Land	Value Annual Crop
		$100	$15	$175	$75
Kittitas	70,000	$7,000,000	$1,050,000	$12,250,000	$5,250,000
		$120	$12	$200	$75
Yakima Highline	200,000	$24,000,000	$2,400,000	$40,000,000	$15,000,000
		$110	$12	$200	$75
Okanogan	60,000	$6,600,000	$720,000	$12,000,000	$6,000,000
		$100	$20	$175	$75
Horse Heaven	250,000	$25,000,000	$5,000,000	$43,750,000	$12,750,000
		$79	$8	$175	$75
Columbia Basin	2,000,000	$158,000,000	$16,000,000	$350,000,000	$150,000,00
Five Mile or		$80	$8	$175	$75
Lower Snake	120,000	$9,600,000	$960,000	$21,000,000	$9,000,000

Undeveloped Irrigable Agricultural Lands in the State of Washington, which can be reclaimed at a reasonable cost

		Acres
Methow Valley	Okanogan County	4,300
Sinlahekin Valley	" "	2,200
Methow-Okanogan Project	" "	40,000
Bonaparte Project	" "	4,000
Whitestone Project	" "	11,500
Horse Heaven Project	Benton County	200,000
White Bluffs, Hanford & Five Mile Rapids Project	Benton, Franklin & Grant Counties	75,000
Kettle River Valley	Ferry County	5,000
Kettle River Valley	Ferry & Stevens County	4,200
Colville Valley	Stevens County	6,200
South Half of Pend Oreille County		8,000
Curlew Valley	Ferry County	2,500
San Poil Valley	" "	3,000
Chamokane Creek	Stevens County	3,500
Camas Prairie, Glenwood Valley	Klickitat County	25,000
Along Columbia River (Pumping projects)		2,000
Kittitas Highline Project	Kittitas County	70,000
North & East Part of Kittitas Valley	" "	12,000
West of Yakima River, Kittitas Valley	" "	3,000
Teanaway Valley	" "	1,500
Upper Kittitas Valley	" "	4,500
White Salmon Valley	Klickitat County	6,000
White Salmon Valley	Skamania County	1,500
Little White Salmon Valley	" "	4,500
Kittitas Project	Yakima County	70,000
Wenas-Selah-Moxee Project	" "	35,000
Roza Project	" "	68,000
Kennewick Project	Benton County	40,000
Yakima Indian Reservation	Yakima County	70,000
Columbia Basin Project		1,750,000
Lamor Reservoir & Irrigation System	Walla Walla County	60,000
	Total	2,592,400

CHAPTER XXXI.

WATERPOWER

Washington Has Greatest Undeveloped Water Power in U. S.—Five Million Potential H. P. in State—Means Immense Industrial Developments—Harnessing of Water Power in Pioneer Days Crude—Considerable Power in Use Now—Vast Projects Contemplated—Table of Present Development in State.

In the economy which is destined to make for progress and prosperity in the enterprises of tomorrow, there is no resource which means more to any community than an abundance of water power which can be cheaply and extensively utilized. "White coal" is the expressive name given to this energy which lies latent in the swift currents of upland rivers; it is an asset in which the state of Washington and other regions of the Pacific Northwest are peculiarly fortunate by reason of their topography.

Within the short distance of fifty miles, as the crow flies, the rivers of the west slope of the Cascades fall from an average altitude of five thousand feet at the summit, to sea level, supplying a constant volume and never-ending sufficiency for steady, all-year-round power, fed as they are by the rains of the lower levels and by the summer melting of snows in the higher altitudes. On the eastern slopes of the Cascade range are likewise unnumbered streams flowing down tumultuously from glaciers and mountain lakes located on the water shed of the Columbia river, tumbling in cataracts or rushing in rapids that have the roar of power unmistakable to men of constructive vision.

This wide distribution of economic energy in the eastern portion of the state is of especial significance in making possible the irrigation by pumping systems of large tracts that cannot be reached by a gravity system. In the western half of the state, destined by reason of geographic location to be a busy hive of manufacturing industry that will supplement the commerce already passing through these channels, the assurance of cheap and ample power makes rapid advancement in manufacture certain.

Washington has within its boundaries more undeveloped waterpower than any other state in the union, a recent map of the United States geological survey showing 125 h. p. to the square mile for this state, almost twice that of the second commonwealth in the list.

Government figures as to the minimum potential power show 4,932,000 for the state of Washington in a total of 26,736,000 for the entire country. Of the maximum potential in the United States, according to the U. S. Geological Survey, about sixteen per cent is in the streams of Washington; with proper storage facilities and equipment for conserving the high waters of the flood period, a total of 9,500,000 horsepower can be developed.

What this means for the future can be determined by comparison with the present development which has already stamped this region as an important power center, though the total power thus far harnessed amounts to but 361,000, hardly four per cent of the resources with which nature endowed the state when the Cascades were uplifted in the path of the warm and moist winds from the Pacific to rear glacier crowned crests from which the streams hurry downward in mighty foam-splashed currents from the crystal source to the sea. Taking as an illustration three streams which are prominent in the development, it is estimated that the White river and its tributaries can

produce a maximum of 285,000 h. p.; Cedar river 200,000 h. p.; Snoqualmie river 400,000 h. p.; and Skagit river 600,000 h. p.; of the total amount the present development aggregates about 100,000 h. p.

Harnessing of water power in pioneer days was a matter of the crude flume and overshot wheel. In Seattle the first water system was an open trough leading to the Yesler mill from a small tank located between what are now Third and Fourth avenues, just north of Yesler Way. The supply came from a spring that was the source of a small stream running to the bay. Water power was taken from this pipe line for a tannery that was on its route. The trough was later replaced by a wooden pipe made by boring twelve-inch logs in six-foot lengths.

When utilization of water power turned from the old-fashioned mill wheels to the modern turbines for transformation into electric energy, the great water-falls first attracted attention, and Niagara set the pace for America. Naturally in the western region similar locations were sought, and one of the first developments on a large scale was at scenic Snoqualmie Falls, where the river plunges over a precipice 268 feet high. Following the precedent of Niagara the first power station was excavated in the basalt rock beside the cataract. Later another station was built below the falls proper, taking the water from above the point where the river plunges and conveying it by tunnel to the pen-stocks.

Similar considerations attracted attention to the Spokane River, with the great falls in the heart of a city that has sprung up around them to become the metropolis of the Inland Empire. Picturesque as they are, these cataracts are but impressive climaxes of the tremendous power latent in the Spokane river for a stretch of a hundred miles in which it drops 1,280 feet, giving a potential energy of 400,000 horse-power; of this amount four plants have already harnessed 172,000 h. p. The city of Spokane has its own plant,

with waterwheels rated at 3,800 horsepower and generators at 2,100 kilowatts.

The first development at Snoqualmie was undertaken in 1898 by Charles H. Baker, a civil engineer from Chicago, where his father was a broker. He designed and built a plant with a capacity of 6,000 kilowatts, from which power and light were furnished to Tacoma, Seattle, and later, Everett. The improvements progressed, and in 1911 the plant was acquired by the Puget Sound Traction, Light & Power Company, now known as the Puget Sound Power & Light Company, controlled by the Stone & Webster interests which are among the foremost in the country.

The first plant built by this company was at the extreme lower end of the Puyallup river canyon in Pierce county, the site being named Electron. This was placed in operation in 1904. The waters of the Puyallup are fed by five glaciers on the slopes of Mount Rainier, furnishing a steady and inexhaustible supply, from which the present installation develops 14,000 kilowatts. In Pierce county this company also has a plant, its largest, at Dieringer, where its turbines are rated at 56,000 h. p., with generators of 35,000 kilowatt capacity installed. The water is diverted from the White river to Lake Tapps as a storage reservoir, the power house being located at the foot of the plateau on which the lake is found, from 500 to 700 feet above the surrounding levels.

A fourth hydro-electric plant operated by this company is in Whatcom county, at Nooksack Falls on the north fork of the Nooksack river. The cataract has a sheer plunge of 101 feet, and the plant operates under a head of 176 feet, developing 2,500 horse-power.

Municipal undertakings have been made on a large scale in this field, the city of Tacoma having a plant on the Nisqually river, with turbine ratings of 32,000 horse-power and generators of 20,000 kilowatts. Seattle

utilizes power from the Cedar river, source of the municipal water supply through Cedar Lake, for development of current for city lighting, as well as private power and light service. Additions in contemplation would almost double the capacity of 31,500 kilowatts. The city of Seattle has also undertaken a power project on the Skagit river in Whatcom county, under federal permit, with ultimate capacity of 600,000 horsepower, according to engineering estimates.

In Eastern Washington, as has been noted, pioneer undertakings in the hydro-electric line were on the Spokane river. Here in its plants the Washington Water Power company has installed capacity of 108,250 horsepower. The Spokane & Eastern company also has a mammoth installation.

The many rapids in the Columbia river, with its stupendous volume of water, have attracted electrical engineers, and along the river and its tributaries the Pacific Power & Light company has many plants strategically located.

One of the greatest projects under consideration is at Priest Rapids in the Columbia, where engineers estimate that a total of a half-million horse-power will be available. Under the recently enacted federal legislation providing permits for water-power development this site is under consideration, among its possibilities being the operation of pumping plants for irrigation and the manufacture of nitrates from the air for agricultural use. Other important rivers of the east side in addition to the Columbia and Spokane, which have potential hydro-electric sites are the Snake, Pend d'Oreille, Methow, Okanogan, Chelan, Yakima, Wenatchee and Klickitat, with numerous tributaries to each of them.

West of the mountains the Stillaguamish, Skykomish, Skokomish, Elwah, White Salmon, Lewis, Toutle and Cowlitz are among the streams that are commanding interest under the new conditions.

Besides the established service of light and power for industrial motors, there is a vast field of possibilities for the application of electricity when the streams are harnessed to more nearly a capacity figure. Electro-metallurgy and electro-chemistry are just at the period of dawn. Electric smelting and electrolytic refining have been demonstrated to be practical when ample current is available at economical rates. The electric furnace has made its greatest achievement in production of some of the rarer base metals, making them available commercially where they were not used before, and supplying such valuable products as molybdenum steel, vanadium and tungsten. Electricity is responsible for the commercial use of aluminum; and the electro-metallurgist anticipates the day when he can replace blast and crucible furnaces with electric furnaces for production of pig iron and steel. This work will inevitably find its chief location where there is abundant water power with natural resources, and Washington offers the combination.

Among the electro-chemical processes which have proved successful are the manufacture of various alkalines, such as chlorine and caustic soda, processes for fixation of nitrogen by extraction from the air for manufacture of nitric acid; production of metallic magnesium, phosphorus, and artificial abrasives. One prominent electrical engineer is quoted in a state publication as predicting that Washington will some day be called "the factory of the country," just as Niagara has been called in the past "the laboratory of America," because of what has been accomplished in electrical experiment and production. "Washington," says this engineer, C. E. Bogardus, of Seattle, "will be the greatest state in the union in electro-chemistry and electro-metallurgy."

The table following, compiled by Mr. W. G. Weigle, forest supervisor of the U. S. Forestry Service, shows in detail the present development of hydro-electric energy in the Evergreen State. It may be noted in

study of these statistics that 746 watts are equivalent to 1 horse-power. Conversely, 1 kilowatt is equal approximately to one and one-third horse-power.

1920 WATER POWER IN STATE OF WASHINGTON

Compiled from information collected from individual companies and cities furnished by Public Service Commission and Forest Service. Information concerning small plants rather incomplete. Names of smaller organizations subject to correction due to transfer of ownership.

W. G. WEIGLE,
Forest Supervisor.

Stream—	Location Power Plant Sec.-T.-R.	Rated Capacity Water Wheels H. P.	Generators K. W.	Head Utilized Ft.	Ownership—
Palouse River		75	40a		Washtucna Lt. & Pr. Co.
Asotin Creek	Asotin Plant 20-10-44E	2,560	1,500	475	Washtucna-Idaho Water Lt. & Pr. Co.
Asotin Creek	Pomeroy Gulch Plant.	500	400	220	Washtucna-Idaho Water Lt. & Pr. Co.
Yakima River	2-8-24 E	730	600	17	Pac. Power & Lt. Co.
Yakima River	Near Prosser	190	Pumping		U. S. Recl. Service
Sylvia Creek	Montesano F.S.313		Pub. S. Com. 200..	65	N. W. Elec. & Wat. Wks. Co.
Cloquallum Creek	Elma	200	150	20	N. W. Elec. & Wat. Wks. Co.
Wenatchee River	10-24-17 E	12,000	7,500	175-201	Great Northern Ry. Co.
Wenatchee River	26-24-18 E	2,380	1,400	55	Wenatchee Val. Gas & E. Co.
Entiat River	18-25-21 E	2,000	1,100	78	Wenatchee Val. Gas & E. Co.
Chelan River		270	Div. 75 con. pumps	14	Chelan Electric Co.
Chelan River	21-27-23 E	1,200	800	40	Chelan Falls Pow. Co.
Wenatchee River	10-24-17 E	250	155	47-59	Tumwater Lt. & Wat. Co.
Elwha River	15-30-7 W	9,600	6,000	100	N. W. Pow. & Mfg. Co.
In Clark Co., location unknown		1,600	Paper mill		Crown Willamette Paper Co.
Cedar Creek	Yacolt	110	60		N. Clarke Lt. & Pr. Co.
Lackamas Creek	Washougal	250	150a		Western Lt. & Pr. Co.
Tucannon River	19-12-38 E	210	100a		Starbuck Elec. Co.
Tucannon River	18-11-41 E	250	150	82	Pac. Pr. & Lt. Co.
Kalama River	18- 6- 1 E	1,000	635	40	N. Coast Pr. Co.
Snoqualmie River	30-24- 8 E	31,000	19,750	275 & 285	Puget Sound Lt. & Pr. Co.
Cedar River	4-22- 8 E	20,800	10,400	600	City of Seattle
Lake Union	29-25- 4 E	2,500	1,500	410	City of Seattle
Yakima River	32-18-18 E	1,660	750	52	City of Ellensburg
Yakima River	2-18-17 E	93	Sawmill & flour mill	11	J. L. Mills & Son
Yakima River	2-17-18 E	81	Flour mill	22	Ellensburgh Mill & Feed Co.
Yakima River	13-17-18 E	83	Flour mill	10	Tjossem Flour Mill
Block House Creek	19- 4-15 E	250	150	285	Pac. Pr. & Lt. Co.
White Salmon River	30- 4-11 E	150	75	17	Pac. Pr. & Lt. Co.
White Salmon River	10- 3-10 E	20,000	12,000	172	N. W. Electric Co.
In Lewis County	Pe Ell	175	60a		Central Lt. Mfg. Co.
Tieton River	35-13- 4 E	100a	50	15	Morton Elec. Lt. & Pr. Co.
Spokane River	20-27-39 E	36,000	20,500	64-74	Wn. Water Power Co.
Spokane River	13-27-39 E	67,500	37,500	Ave. 168	Wn. Water Power Co.
Methow River	34-30-23 E	650	380	28	Okanogan Valley Power Co.

Toats Coulee Creek	33-39-25 E	700	450	367	Tillocum Dev. Co., not operating, plant still exists.
Similkameen River	13-40-26 E	500	350	24	Okan. Val. Pr. Co., recently enlarged, prob. 2500 H. P.
Twisp River	2 mi. above Twisp	131	50	25	Twisp Lt. & Pr. Co.
Twisp River	At Twisp	172	Flour mill	21	Twisp Roller Mills & Pr. Co.
Salmon Creek, No. 1	Near Conconully	300a	187	108	U. S. Recl. Service
Salmon Creek, No. 2	Near Conconully	300a	187	55	U. S. Recl. Service
Smith Creek	N. of South Bend	200	115		Willipa Elec. Co.
Sullivan Creek	22-39-43 E	4,000	3,530	460	Lehigh Portland Cement Co.
White River	7-20- 5 E	56,000	35,000	44-480	Puget Sd. Lt. & Pr. Co.
Puyallup River	4-17- 5 E	30,000	14,000	880	Puget Sd. Lt. & Pr. Co.
Nisqually River	32-16- 4 E	32,000	20,000	Ave. 418	City of Tacoma
Nisqually River	Rainier Natl. Park	100a	50	20	Rainier National Park Co.
Van Trump Creek	Rainier Natl. Park	543	250	425	Rainier National Park Co.
Evans Creek	34-18- 6 E	175a	100	190	Montezuma Coal Mining Co.
Bear Creek	11-36- 8 E	2,000	1,200	444	Superior Portland Cement Co.
In Skagit Co.		250			Pac. N. W. Traction Co.
Wind River	N. E. of Stevenson	100a	75a		Skamania Lt. & Pr. Co.
Jim Creek	E. of Arlington	300	200	65	Wash. Coast Utilities Co.
Canyon Creek	N.W. of Granite Fls.	100	60		Granite Falls Electric Co.
Sultan River	31-28- 8 E	120	50a		Sultan Elec. Co.
Spokane River	6-26-42 E	22,000	12,000	58-65	Spok. & E. Ry. & Pr. Co.
Spokane River	18-25-43 E	15,800	8,800	64-74	Wn. Water Power Co.
Spokane River	11-25-43 E	3,800	2,100	16-24	City of Spokane
Lit. Spokane River	Milan	200	80		Little Spokane Lt. & Pr. Co.
Colville River	20-36-38 E	750	420	78	Stevens Co. Lt. & Pr. Co.
Brouse Creek	S. of Valley, Wn.	250a	100a		Kulzer Elec. Lt. & Pr. Co.
Chewelah Creek	Chewelah	50	25a		City of Chewelah.
Deschutes River	Near Olympia	1,600	1,000	81	Olympia Lt. & Pr. Co.
N. Fk. Nooksack River	31-40- 8 E	3,200	1,500a	176	Puget Sound Lt. & Pr. Co.
In Whatcom Co.		250			Chancellor Gold Mining Co.
Naches River	13-14-17 E	10,000	7,500	151	Pac. Pr. & Lt. Co.
Naches River	3-14-17 E	1,900	1,400	53	Pac. Pr. & Lt. Co.
Naches River	23-13-18 E	500	350	38	Pac. Pr. & Lt. Co.
Naches River	23-13-18 E	250	Pumping	38	Pac. Pr. & Lt. Co.
Columbia River	2-13-23 E	3,000	1,800	20-28	Pac. Pr. & Lt. Co.
Yakima River	20-14-19 E	16	Pumping	11	Gilson Pumping Plant
Yakima River	Rocky Ford Plant	300a	187	73	U. S. Recl. Service
Tieton River	Constru Plant	450a	270	45	U. S. Recl. Service
TOTALS		409,137	237,516		

a—Estimate.

CHAPTER XXXII.

MANUFACTURES

Everything Required for Manufacturing Here—Advantages Both East and West—No Manufacturers Here 70 Years Ago—First Important Industry—Lumber a Staple—Many Flouring Mills—Large Smelting Works—Fruit and Fish Canneries—Numerous Packing Plants—Printing and Publishing—Wood Pulp—Milk Products—Many Smaller Industries—Some New Ones—Summary Table—Shakes and Shingles.

Western Washington possesses within itself practically all the essential requisites for becoming a great manufacturing district. Its unequalled harbors, its almost inexhaustible timber supply, its unlimited water power, excellent coal mines and last, though not least in importance, its mild and salubrious climate, all combine to make it one of the choicest locations on the globe for manufacturing enterprises. Nor is it the western portion alone that can claim all the advantages for future industrial activities; the great and prosperous Inland Empire also has many and great advantages for the development of manufacturing. In many portions of that vast territory there is quite an abundance of timber, productive coal mines, ample water, when harnessed, to supply power for any and all kinds of manufacturing plants; and besides it is blest with a fertile soil from which is produced the finest grains and grasses, the most perfect vegetables and most delicious fruits that can be found in the temperate zone. It lacks harbors at its door, but harbors are not absolutely essential for manufacturing establishments, where there is sufficient railway transportation. It is not unlikely that Spokane, with its extensive contributing territory of minerals, timber and agriculture, may some day develop into a famous manufacturing center, a worthy rival of the cities on the Sound.

Seventy years ago there practically did not exist in this vast territory now embraced within the confines of our State, either husbandry or manufacture. To be sure, there were a few hundred white men scattered here and there, principally in the vicinity of Puget Sound, who led, as one might say, a hand-to-mouth existence. A small number even then were at times engaged in making shingles by hand, some of which were sold to the Hudson's Bay Company, or bartered to captains of small sailing vessels, that occasionally entered the Sound from California and other points; but the business was too insignificant to be called manufacturing.

It was not many years however until the lumbering industry began to assume considerable importance, and for a long period has been the staple industry of Western Washington and in all probability will continue as the most important for many years to come. But since the beginning of the present century numerous enterprises, in the manufacturing line, have grown from small beginnings to large proportions; and every little while some entirely new industry is established here by far-seeing business men who sense the great possibilities that the future holds for this State.

Men of mature judgment, who have travelled and observed, have stated time and again that many decades will not have elapsed before the manufactures and commerce of the Pacific Northwest will not only equal but surpass, that of New England. And why shouldn't it? We have incomparably better harbors, finer climate and far more natural resources than the northeastern commonwealths.

Besides the lumbering industry we have now many flourishing manufacturing plants in the Western portion and some in the Eastern part of this State.

There are many first-class flouring mills in the State, where high grade flour and every kind of cereal product is manufactured for domestic use and export.

It would be invidious to give names or localities; but the reputation of all stand high in commercial circles. We possess smelting works as complete and up-to-date as any in the land, prepared to handle the immense output that must soon come from the inexhaustible deposits of Alaska. Fruit and fish are put up and preserved in numerous canneries in various parts of the State and distributed to almost every portion of the habitable globe to tickle the palates of those who are not so fortunate as to dwell where such delicacies form a part of the daily menu, as in our favored Washington.

Many extensive slaughtering and packing plants are in active operation here wherein the livestock products of the State are taken care of; the surplus being exported to foreign lands.

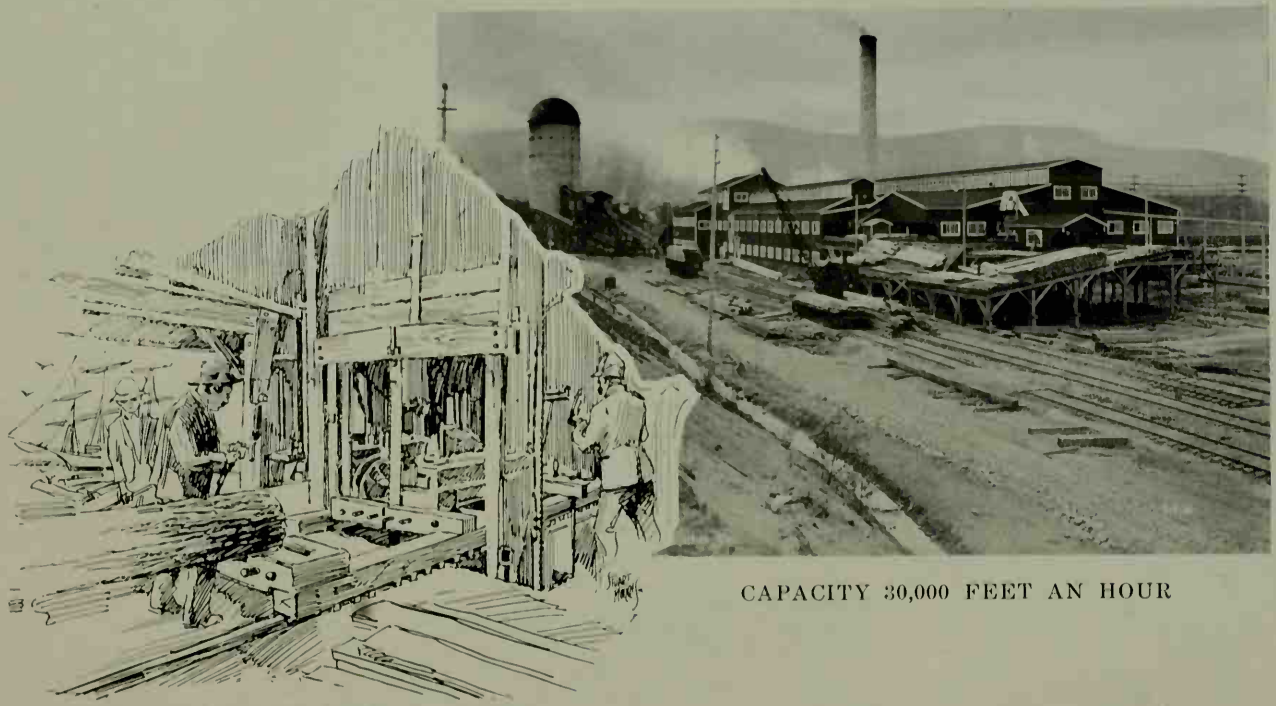
Printing and publishing is now an important State industry and many high-class establishments of that character abound within our borders. Allied to this is the pulp industry, which is developing rapidly, many plants having been recently added; and it can now be said that the manufacture of paper has already become one of the important industries of the commonwealth and destined to develop much larger proportions.

The milk products industry has had a wonderful growth in the two last decades and its possibilities for the future would be hard to overestimate.

In another chapter this flourishing business is given more extended space.

In the big and expanding enterprises carried on in our State the steel industry is certainly deserving of more than ordinary consideration.

The first step taken in the establishment of the iron and steel industry in this state was in 1882, when a blast furnace of 25 tons capacity was erected at Irondale, near Port Townsend. In after years it was enlarged and operated for several years.



CAPACITY 200 FEET AN HOUR

CAPACITY 30,000 FEET AN HOUR

In 1894, an iron rolling mill was erected at Lakeview, near Tacoma. This was moved to Youngstown in 1903. In 1910 the Western Steel Corporation built the first three open hearth furnaces in the Northwest at Irondale.

In 1919 part of the equipment was moved to Youngstown. The Youngstown plant has been recently enlarged at a cost of more than a million dollars and will undoubtedly become a most important factor in the manufacturing development of the State.

This State also possesses several large and well equipped establishments where machinery of all kinds is manufactured from a donkey engine to a can opener.

Besides the foregoing, may be mentioned: Manufacture of toys, hand tools and high-class furniture of all kinds, phonographs, electric cooking and utility appliances, cut-glass in both heavy and light patterns, chocolates and sugar, and very recently there has been established a factory for tanning and preparing the skins of sharks, walrus and other denizens of the deep. It may be interesting to know that beautiful leather can be made from shark hides. It resembles what is known as "Russian" leather and is suitable for upholstering, making hand bags, or water-proof shoes. A shark hide can be split as many as eight times without impairing its utility. There are said to be 79 varieties of sharks in the Sound and adjacent waters.

Shakes and Shingles

I have lived but precious few years of my life under a shingle roof. All of the log cabins of the Pioneers were covered with "shakes", otherwise known as clapboards. The buildings were low, often without a chamber above the living room of the ground floor, the roof taking the place of a ceiling, supplying abundant ventilation and freely admitting the music of the "patter of the rain" to the ears of the happy inmates below. The shakes, usually about three feet long and

from six to twelve inches wide carefully laid with a second layer to break joints, projecting at each end beyond the cabin wall, provided a splendid roof, and would last a lifetime when made out of our durable cedar timber of which there is such an abundant supply. These layers of shakes were usually held in place by weight poles—straight saplings—extending the whole length of the cabin, instead of nails, nails being too expensive and besides, not so secure.

When we moved out of the cabin at Puyallup to the new residence, a metal roof took the place of the clapboards and a close ceiling overhead of the story below.

I can truly confess that I have a feeling akin to affection, should I say, to the old cabin roof, weight poles and all. Laugh if you please, youngsters! It will do me no harm. Like the "old oaken bucket that hung in the well", or "the little red school house", of precious memory to many, the moss-covered clapboard roofs of the cabins revive old-time memories of happy pioneer days, that cannot be effaced.

The pioneers, however, soon learned the art of making shingles.

The Hudson's Bay Company had preceded the American pioneer settlement, and had established a trade in other articles than furs and among which was shingles, for which it was willing to exchange food or clothing to the needy newcomers. And so it came about that hand-made shingles almost assumed the role of legal tender, instead of money, of which so scant a supply existed, as anything the great company had for sale would be exchanged for shingles.

A summary of the purchases of shingles by the Hudson's Bay Company, or rather by its double, the Puget Sound Agricultural Company, at Fort Nisqually, subsequent to 1847, as shown by the books, reveals in part the extent of the trade of 1,150,000 for which

not less than three dollars per thousand and from that to ten dollars were paid, the higher price after the discovery of gold in California. One pioneer alone supplying 225,000; for 35,000 of which he was paid at the rate of ten dollars per thousand.

But it was not until about the year 1885, that the manufacture of shingles began to develop into an industry that has expanded in recent years so as to become a very important factor in the commercial activities of our state. The building of railroads gave the stimulus to the infant industry. The old methods of splitting them out by hand gave way to machinery.

The first machines used were what are known as "hand machines," manufactured in Grand Rapids, Michigan, and in which very little except the actual sawing of the shingle was automatic. This type was followed by the "Single Block" machine which soon gave way to the "Double Block", and which in turn was followed by the "Ten Block", each succeeding type speeding up production. The foregoing types of machines have been almost universally discarded in favor of the present day "Upright" machine, of which there are some 1500 in use in the State.

In 1920 the output of shingles in the State of Washington was, according to the United States Forest Service Report, approximately 4,800,000,000 valued at $12,500,000.00. The number of shingle mills in the State is 350.

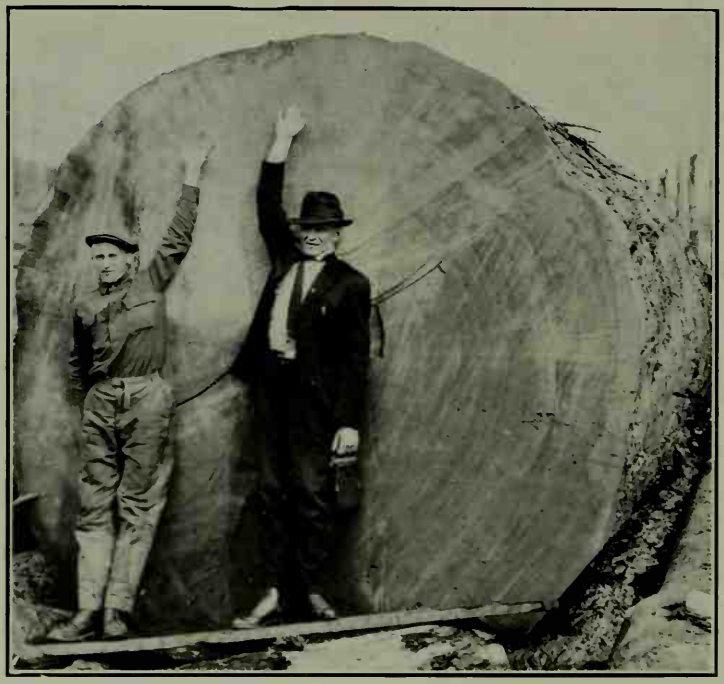
Washington is the leading state in the U. S. in the manufacture of shingles and possesses a greater quantity of red cedar, peculiarly adapted for that purpose, than any other state.

MANUFACTURING SUMMARY FOR THE STATE

	Census 1919	1914	Per cent of increase 1914-19
Number of establishments	4,919	3,829	28.5
Persons engaged in manufactures	150,482	78,448	91.8
Salaried employees	13,354	8,088	65.1
Wage earners (average number)	132,932	67,205	97.8
Primary horsepower	587,702	399,567	47.1
Capital	$553,125,000	$277,715,000	99.2
Services	225,757,000	63,207,000	257.2
Salaries	30,574,000	11,504,000	165.8
Wages	195,183,000	51,703,000	277.5
Value of products	809,635,000	245,326,000	230.0

MANUFACTURING SUMMARY FOR CITIES NAMED

ABERDEEN—			
Number of establishments	73	60	
Persons engaged in manufactures	2,949	1,729	70.6
Capital	$ 8,596,000	$ 4,830,000	78.0
Value of products	15,758,000	4,815,000	227.3
BELLINGHAM—			
Number of establishments	110	86	
Persons engaged in manufactures	3,520	2,182	61.3
Capital	$ 13,581,000	$ 6,940,000	95.7
Value of products	17,808,000	6,264,000	184.3
EVERETT—			
Number of establishments	127	98	
Persons engaged in manufactures	3,640	2,209	64.8
Capital	$ 16,480,000	$ 6,298,000	161.7
Value of products	21,887,000	6,530,000	235.2
HOQUIAM—			
Number of establishments	38	33	
Persons engaged in manufactures	2,293	1,759	30.4
Capital	$ 7,026,000	$ 4,089,000	71.8
Value of products	11,872,000	5,009,000	137.0
SEATTLE—			
Number of establishments	1,229	1,014	21.2
Persons engaged in manufactures	47,074	15,761	198.7
Capital	$157,915,000	$61,317,000	157.5
Value of products	274,431,000	64,475,000	325.6
SPOKANE—			
Number of establishments	365	277	31.8
Persons engaged in manufactures	7,228	4,159	73.8
Capital	$ 27,644,000	$18,891,000	46.3
Value of products	42,445,000	16,636,000	155.1
TACOMA—			
Number of establishments	348	339	2.7
Persons engaged in manufactures	12,355	8,084	52.8
Capital	$ 68,098,000	$28,287,000	140.7
Value of products	103,172,000	27,708,000	272.4
VANCOUVER—			
Number of establishments	39	28	
Persons engaged in manufactures	4,827	425	1035.8
Capital	$ 52,577,000	$ 1,089,000	4728.0
Value of products	21,252,000	1,301,000	1533.5
WALLA WALLA—			
Number of establishments	69	47	
Persons engaged in manufactures	611	455	34.3
Capital	$ 3,020,000	$ 2,426,000	24.5
Value of products	4,323,000	2,015,000	114.5
YAKIMA—			
Number of establishments	77	42	
Persons engaged in manufactures	1,566	730	114.5
Capital	$ 4,921,000	$ 2,384,000	106.4
Value of products	5,767,000	1,937,000	197.7



SECTION OF LARGE FIR 12′ 6″ DIAMETER

TIMBER OF WASHINGTON

CHAPTER XXXIII.

Lumber Industry

Early Experiences Near Columbia River—Felling Giant Firs—Scaffolding for "Spring Board"—Oldest Church Steeple in the Nation—Open and Skid Roads—Advanced Methods—Great Destruction by Fires—Northwest Greatest Timber Storehouse on Earth—West Coast Lumbermen's Article.

The article prepared by the West Coast Lumbermen's Association at the earnest solicitation of the author, on "The Lumber Industry of the Northwest," is so complete that not much more can be added without duplication. A short recital of some pioneer experiences, however, may be interesting, while casting some light upon the general condition of the timber region and industry of the early days of the Territory.

The careful reader will note reference, in another chapter to a "hand-logging" experience of the author on the bank of the Columbia River, following the great flood of the winter of 1852-3.

We had come from central Indiana, a region of comparatively small timber, of hickory, beach, walnut and sycamore trees. While accustomed to the use of the axe, we had never seen anything like the giant fir trees standing near the bank of the Columbia. How to fell one of these trees was a puzzler. The projecting, monster roots, angling up to finally take form as the body of the tree, precluded an axman from standing close to the body.

An earlier pioneer pointed out how we might burn out the heart of the tree by boring two augur holes at an angle to meet inside the inner sap bark and drop a few coals into the upper angle. Work was

suspended in the attempt to chop down the monster, a trip of forty miles made to procure an augur, and soon after had the satisfaction of achieving the desired result.

One trouble encountered was that we could not guide the direction of the falling body as with the "curf", a sloping cut formed by the ax, and then again, in one instance the fire continued consuming the body, despite all efforts to stop it. In after years, I knew of a fire in the top of a tree at Steilacoom, at least a hundred feet from the ground, that burned for over three months. At times, the flame would shed light around about like a great torch, then flicker and finally smolder for days, following the pitch seams of the trunk, at last reaching and consuming the great lateral roots.

Twenty years ago, when memory served me better than now, I wrote of that "hand-logging", on the bank of the Columbia (subsequently published in my reminiscences, now nearly out of print), a more complete account of our experiences.

Afterwards we acquired the art, to "scaffold" by cutting a notch in the body of the tree, inserting the end of what is called a "spring-board," to stand on above the projecting roots; sometimes a second and not infrequently a third notch would be cut, each one higher, to get above not only the projecting roots, but likewise the tough butts near the ground.

If the reader should ever visit Tacoma and take the trouble to go to the site of the first church built in that city, he would there see where an intrepid axman, in successive stages, climbed the body of a great tree and chopped it down full forty feet above the ground. Subsequently, a bell was place upon this unique, oldest church steeple of the nation. The body of the tree is now hidden from sight by a dense growth of ivy vine, destined to ultimately devour the substance

of its support and precipitate its fall to the nearby church roof.

From hand-logging with canthook, block and tackle, improvised rollers, etc., the next step was with oxen and skid roads. These roads, with crosswise, half-buried skids every half-rod, enabled an ox-team to haul a surprising load, mostly or always on a down grade, a veritable train of logs; then followed the horse to displace the ox, which in time gave way to the donkey engine and cable, the narrow-gauge railroad, and finally, in many locations, the standard railway. Day after day, a log train at least half a mile long, with logs piled mountain-high, passes over the Northern Pacific tracks, through the city of Puyallup, on the down-grade from the mountains to the tide-water of Puget Sound at Tacoma.

The growth of timber in the moist, mild climate on the western slope of the Cascade mountains and to the sea, including the Puget Sound basin, is rapid; one might say, almost continuous winter and summer.

Vast areas of timber have been destroyed by fire. In the early settlement of the country, the pioneers were powerless to control the forest fires, and could only let the fires burn until the rain came. It's different now. As I write, an aviator, just arrived from Portland, Oregon, a hundred and twenty miles distant, in a flight of two hours, reports that patrols, consisting of three machines and each with aviators to man them, will be stationed out over the Northwest, machines being in the air every minute of available daylight, scanning the horizon for the bit of smoke that means the starting of a possible disastrous forest fire.

While the foregoing quotation is not history, there is no doubt that the precaution outlined will be taken. What already has been done is: Numerous rangers' camps have been maintained, trails and roads opened, telephone lines built and maintained, with the result

that the annual destruction by fire has been greatly reduced.

The heritage of the forests of Washington, Oregon, British Columbia and Alaska, belong to the people of the earth for the generations to follow. No such vast storehouses of timber exist, as these of the Northwest Coast, elsewhere on the face of the globe. Our government is now awake to the transcendental importance of preserving what nature has so bounteously bestowed.

The pioneers upon their advent into the country at once took measures to utilize the timber first for their convenience and soon after for profit. First, by the froe and saw or axe, a little later by the whip-saw, soon to be followed by primitive mills propelled by water power.

In a reminiscent mood of lighter vein, I have given a history of these, here designated as the "Up-and-Down" saw mill, though have not drawn on my imagination to adorn a tale and the reader may venture to peruse the story as true history, which it is.

The old story that everything that goes up must come down could not be proven true by the experience of an old pioneer, Nicholas Delin, who in the year 1852, built his "Up and Down" saw-mill at the headwaters of Commencement Bay, now the waterfront of Tacoma.

An artist has produced a faithful picture of the old mill as I saw it in June of 1853 when everything about it was new and when the resolute pioneer was hopeful of gathering a fortune from out of the primeval forests all around about, by manufacturing lumber in his "Up and Down" saw-mill. His was a typical mill of that day. One of this kind had been built at Tumwater in 1847, two miles south of where the State capitol building now stands at Olympia. M. T. Simmons, a member of the first party of American settlers north of the Columbia River and consequently of the State of Washington was the reputed owner.

It is known George Bush, a negro mulato man, who had crossed the Plains the same year Simmons did (1844) and had accompanied him to the Sound country, supplied the funds to aid in the enterprise. Bush undoubtedly was part owner, but under the laws then prevailing in this great free(?) country, having negro blood in his veins, could not hold property, sue or testify in court, or in any way enjoy the rights of citizenship. Bush had brought three thousand dollars in silver across the plains in his ox team wagon securely covered by a second or false bottom of the wagon bed.

I saw this mill of Delin's in operation in June of 1853 upon my arrival at the head of the Sound in that year.

Thomas M. Chambers built one of these "Up and Downs" on Steilacoom Creek, a mile north of the present great insane asylum where now 2,400 inmates are cared for. I think this was built the year of 1847 or 48. Andrew Bird built one at the head of this same Creek where it issued out of the lake, a mile east of the asylum site; this in 1858. Two stairwart brothers named Sherwood built one probably in 1852 on North Bay of Puget Sound about twenty miles northwest of Olympia; both these men stood six feet two inches in their stocking feet, well proportioned giants not only in size but likewise in strength.

Another of this same class was built at the mouth of Sequalitchew Creek, a few miles north of the mouth of the Nisqually river and nearby where the Hudson's Bay Company built Fort Nisqually, in 1833.

I have recorded the existence of these six mills because they were the forerunners of the great lumber industry of the State; neither of these would cut more than two hundred feet per hour; all were propelled by water power and all went out of commission soon after the advent of steam power here and introduction of the circular saw.

The pun or puzzle of reversal of the rule "that all that goes up must come down" is based on a fact

though not sufficient to destroy the rule. Delin's mill, it may be noticed, was built on tide lines, in fact the wheel was lower than a high tide level. The power, gradually lessened as the tide rose finally reached the vanishing point on the down stroke of the saw and hence had gone up and didn't come down.

Among the numerous industries shown is one among the leading lumber producing mills on Puget Sound, of which there are sixty-five so far listed. Each unit of these modern mills will cut ten thousand feet an hour, with some combinations to increase the output even to thirty thousand; the six "up-and-down" mills of early days, the reader will note, would not cut more than ten thousand feet in a twelve-hour day run, a maximum scarcely ever reached as often the saw wouldn't go down in most of them without backing up to take a "run and jump at it."

Now the band saw has to an extent displaced the circular, and electric power, that of steam; the Good Lord only knows what next.

I am not unmindful that the Hudson's Bay Company established an "up-and-down" mill in the earlier days at Vancouver (1825 or 26) which was within the bounds of the State. This mill was established for a political and commercial purpose—to strive to establish ownership of Great Britain north of the Columbia river and to exploit the fur business and incidentally the resources of the country. By this we are shown that these old fashioned primitive mills were not original models invented by the pioneers.

Preceding the introduction of these mills and even afterward, the whip-saw was in use, with a log on a scaffold, a man in a pit to pull the saw down and one above to pull it up. I never tried this method of manufacturing lumber though did have experience with the "ups-and-downs".

In prehistoric days a growth of giant cedars flourished in the Puget Sound basin—all dead now though seemingly destined never to decay. I have seen specimens of these near twenty feet in diameter; most of this class are fallen, many half submerged in earth, moss and vegetable growth, yet sound as a dollar.

The free rift of this growth, beside the symmetrical body free from knots or blemish of any kind rendered it of extreme value to the pioneers. I knew one pioneer to build a good-sized three-room cabin out of one fallen giant, floor, sides of the cabin, partitions, roof —all and had, as he said, enough left to build his barn. The rift of this timber was miraculous. In the hands of an expert, slabs or flooring of long length could be split to vary very little from end to end, or side to side of width even to 30 inches and sometimes more. It came to be a pioneer saying that lumber truer to line could be split than some of the mills could cut.

The Indians utilized this timber for constructing the "Old Man House" five hundred feet long, fragments of which remained when I passed the spot in 1853, in the skiff we built at Olympia.

The Indians used this same timber in shaping their beautiful canoes out of the body of one of these giants; how they did it without measure or line is beyond my comprehension, as also how they navigated these at sea out of sight of land in their whaling expeditions is likewise just as mysterious; we know they did and that is about all we know about it. Some of these would easily carry fifty men and their luggage. I have seen and read an official account of one party remaining at sea five days attempting to tow a monster whale to port and finally compelled to abandon it.

Billions upon billions of shingles have been manufactured out of the cedar both of ancient and more recent growth that have acquired world wide fame and still the work goes merrily on.

The article prepared by West Coast Lumbermen's Association follows:

THE LUMBER INDUSTRY OF THE NORTHWEST

Forests of the Northwest contain the largest and finest growth of commercial timber in the world.

The principal timbered area in the Northwest lies west of the Cascade mountains in Oregon, Washington and British Columbia.

This timbered area bears four principal species —Douglas Fir, Sitka Spruce, Western Red Cedar and Western Hemlock. And the greatest of these is Douglas Fir—or fir, as it is commonly called.

Douglas Fir is the principal stock in trade of the local lumber industry.

Douglas Fir produced the timbers that built the ships needed by the allied governments in the recent war emergency, and, with Sitka Spruce, supplied the supple beams that gave shape and strength to the army airplanes.

The lumbering industry, which includes logging and sawmill operations, as well as the manufacture of finished wood products, such as shingles, sash, doors, cooperage, wooden ships, furniture, and minor wood articles, is the biggest single industry in Oregon and Washington. It gives employment to nearly 60 per cent of the working population in the two states.

This industry dates from the arrival of the first pioneers who brought with them the crude tools with which to convert the native trees into homes. Small sash sawmills soon were built on the banks of many little streams and then came steam-driven plants from which developed the modern electrically-operated lumber mill.

Lumber manufacturing will be an important industry here for many generations. The supply of timber

is almost inexhaustible. With an intelligent system of reforestration, such as now is being developed, it is possible that this supply will last indefinitely.

It is hard to comprehend the enormous timber resources in these Northwestern states. Oregon and Washington contain one-third of all standing timber in the United States.

Since 1905 Washington has produced more lumber annually than any state in the Union.

One-fourth of all standing timber in the country is Douglas Fir, and 80 per cent of the Douglas Fir is in these two states.

Figures do not mean much when dealing with such tremendous quantities, but the forest service reports an aggregate of 2,826,000,000,000 feet of standing timber in the country, of which 547,000,000,000 feet are in Oregon and 395,500,000,000 feet in Washington.

The entire Douglas Fir supply is 718,000,000,000 feet, of which Oregon has 342,400,000,000 and Washington 233,300,000,000 feet.

To give an idea of just what this means: It requires 30,000 feet to load an ordinary freight car. If all the timber were cut into lumber and loaded onto cars it would take 11,400,000 cars and 7,700,000 cars respectively to haul away the Douglas Fir of Oregon and Washington.

In 1919 the industry in Western Oregon and Western Washington produced, it is estimated, an aggregate of 6,300,000,000 feet, of which 84 per cent was fir, The cut in the two states east of the Cascades, consisting largely of Western pine, which species predominates there, was 890,000,000 feet.

Just to go into history a trifle: Douglas Fir was discovered by Archibald Menzies at Nootka Sound, Vancouver Island, in 1792, during the voyage of Captain Vancouver, who first explored the waters of this region.

The species was properly classified by David Douglas, the Scotch botanist, who visited the Northwest in 1827. He took some of the seeds with him to Europe and planted them there. Later the species was named in his honor. The scientific name is Pseudotsuga Taxifolia.

Sitka Spruce is secondary only to fir in its importance and is coming into increased commercial demand. It is the wood that made the airplane possible. It combines length and strength with light weight and resiliency. It is regarded as superior even to fir in forming the long wing beams of the modern airplane. It has many other commercial uses, such as interior finish, kitchen woodwork, sash, door, boats and boxes.

Most of the sounding boards of modern pianos and phonographs are of spruce.

Western hemlock grows intermingled with fir and for many commercial purposes is interchangeable with it. But not possessing the strength or size of fir it cannot be used for the same heavy structural purposes. Its bark is rich in tannin and is extensively employed for that purpose.

Western Red Cedar trees, some of which grow to giant stature, are yielding from 5,500,000,000 to 6,000,000,000 shingles every year. Shingle manufacturing is an important branch of the lumber industry. "Rite Grade" shingles are a standard, nationally-advertised product and are marketed in every state of the Union. Next to fir, the red cedar is the largest tree of the Northwest.

With the exception of the giant sequoias and redwoods of California, the Douglas Fir is the largest tree on the Pacific Coast. It ordinarily attains a height of from 175 feet to 200 feet and a diameter of from three to six feet. Frequently fir trees rise to 250 feet in height with diameters up to nine feet. Owing to its intolerance of shade the lower branches soon die and

drop off, leaving one-half to two-thirds of the trunk clear and a large percentage of the wood free from knots.

The foliage, when mature, is dark green. The cones are reddish-brown and from two to three inches long. The cones ripen in August and September, and while on the trees open to shed their seeds.

The rate of growth of Douglas Fir varies greatly with environment. On the Coast it has reached 100 feet in height and 20 to 24 inches in diameter in 50 years. In the drier regions of the interior it may attain only 14 feet in height and three to four inches in diameter in the same length of time.

In virgin forests of the Coast where Douglas Fir predominates, the stands usually run from 20,000 to 50,000 board feet an acre, though frequently on better sites the yield exceeds 100,000 board feet. One instance is recorded where 5,000,000 board feet were cut from ten acres. Single mature trees contain from 2,000 to 5,000 board feet, but sometimes exceed 10,000 feet.

Douglas Fir is perhaps the healthiest coniferous tree in America. It does not suffer from insect pests or fungus diseases. The logs are remarkably sound, even those cut from old trees.

Its green weight is about 3,300 pounds per 1,000 board feet; but when the lumber is kiln dried its average weight approximates 2,500 pounds per 1,000 feet.

Tests made by the United States Forest Products Laboratories at Madison, Wis., show that fir is the strongest wood, for its weight, in North America. The large timbers that can be cut from these huge trees render it especially useful for ship building and heavy construction. It is also extremely valuable in the building trades, being used for beams, joists, heavy flooring, siding and for general purposes. One of its principal uses is in railroad construction, such

as freight and passenger cars, ties, bridges, warehouse and other buildings.

Owing to its hardness fir is in heavy demand for flooring, for which purpose it generally is cut vertical grained. For interior finish it is recognized as one of the most beautiful American woods. On account of the distinct alternating rings of Spring and Summer wood, it presents, when cut "slash" grained, a most attractive appearance. Douglas Fir hardens with age, and when polished, is not readily marred or scratched, which quality renders it particularly useful for doors, panels, beams and other interior woodwork. It takes stain well and can, therefore, be given a variety of finishes.

Because of its even texture, fir takes paints, oils, varnish and creosote to a decided advantage. It has been used successfully and extensively as a street paving block, giving most satisfaction in this capacity when creosoted.

The wood is remarkably durable in contact with moisture or when exposed to the elements under trying conditions.

Therefore it is in constant demand for piling and poles, masts, spars, mine timbers, highway bridges, silos, tanks, water pipes, cross arms, fencing, cooperage and boxes as well as scores of special and novel purposes.

With development of foreign trade that is accompanying restoration of ocean-going traffic Douglas fir will be sold in nearly every market of the globe. Before the war export markets absorbed only 9 per cent of the output of the Douglas fir mills. The rest of it was sold locally and in domestic markets.

While the foreign market of the future is going to take a greater proportion of lumber produced in the Northwest the field right here at home offers equally promising opportunities.

Heretofore Chicago represented the eastern edge of the territory in which Douglas Fir, Hemlock and Spruce were extensively sold. Less than 2 per cent of the entire output of the Northwest was sold in New York territory. The New York territory and the rest of the Atlantic seaboard bought most of their lumber from the South—Southern Pine. But the Southern Pine supply is being rapidly depleted. Douglas Fir is taking its place. Douglas Fir is popular among lumber dealers and lumber users wherever it is known and is growing in popularity wherever it is being introduced.

Within five or ten years Douglas Fir will be the principal commercial and structural wood marketed and used in the East as it now is in the West and Middle West.

Douglas Fir heretofore has gone chiefly to Australia, South Africa, Mexico, the West Coasts of South and Central America and the Orient. Shipments also have been made to northern and eastern South America, and before the war were increasing to the United Kingdom and other European points. The principal exports of Douglas Fir during the war period consisted of airplane stock, cantonment lumber and other material intended for use in direct war work.

With restoration of normal trading conditions throughout, the manufacturers of Douglas Fir lumber are experiencing a steady and increasing demand for foreign business.

CHAPTER XXXIV.

MINING

Mineral Deposits of Considerable Value—Smelting Ores Important Industry—Tacoma at the Center of That Industry—Mineral Ores in Northern Portion State—Lack of Transportation Retards Development—Significance of Relation to Alaska—Community of Interests—Production of Great Territory Will Be Handled Here—Copper Industry Promises to be Enormous—Will be Smelted in Washington—Iron Ores In Abundance—Summary From Census Report.

The State of Washington has many advantages of location and resources to make it an assured center of industrial growth such as is dependent in no small measure upon metals. In addition to a liberal supply of valuable deposits within the borders of the commonwealth, its water gateways are terminals for direct transportation from some of the richest known mining regions by which ores can be brought economically to sites where abundant supplies of coal are available for fuel, and where tremendous waterpower can be developed to play a leading part in the metallurgy of the years immediately ahead.

The industrial importance of such considerations is attested by the successful operation at Tacoma by one of the leading corporations in the mining world, of an immense smelter which smelts and refines one-twelfth of the copper output of the United States. It occupies a site, fifty-two acres in extent, and its immense concrete stack, 575 feet high, the tallest in the world, stands as a landmark from the waters of Puget Sound by which its raw materials are brought from Alaska and the rest of the North American Pacific Coast, as well as large quantities from the mines of South Ameri-

ca. The smelter has a capacity of two thousand five hundred tons of ore daily, treating copper, silver and gold in the form either of ore or of concentrates. Extensive wharves are maintained on the water front, with ore bunkers and automatic devices for unloading the cargoes. Two gigantic blast furnaces and a reverbatory furnace are in operation, and the converters to which the copper matte comes from these furnaces for final reduction have a capacity of 300 tons of blister copper daily. The electrolytic plant in which the copper is refined, and in which the gold and silver values are separated, has a capacity of 8,500 tons a month. Hydro-electric energy of 6,000 horsepower is installed at the plant, which is pronounced by Walter Harvey Weed in The Mines Hand Book, authority in its field, "one of the most important custom plants on the Pacific Coast, with progressive management and excellent metallurgical practice."

Another considerable factor in the industry is the smelter of the Northport Smelting & Refining Company, at Northport, Wash., which was blown in March 7, 1916, to treat the lead ores from the district tributary to Spokane. Its three lead furnaces have a daily capacity of 300 tons, and are supplemented by an electric fume precipitator and a drossing plant.

The following figures are taken from the U. S. Census Bureau's Summary Concerning Washington Mining and Quarrying Operations for 1919:

Total Value of Products:

1909	$10,537,556
1919	13,329,129

In addition to the primary operations of smelting the crude ores and concentrates, the Northwest offers, through its power possibilities and commercial location, exceptional opportunity for secondary undertakings along metallurgical lines, such as treating scrap materials and refining various metals, including manufacture

of special compounds, such as those used for printing, stereotyping and kindred industries.

Within the State of Washington there has been steady development of properties yielding gold, silver, copper, lead and zinc. The mountain ranges attract alike the veteran prospector and the technically trained mining engineer.

Quartz mines in the northern half of the state are the principal producers of gold, the Mount Baker district and the Republic field leading, while other producers of the yellow metal are found in Okanogan, Stevens, Chelan, Kittitas, Snohomish, King and Clallam Counties.

Silver is produced principally in combination with gold, copper and lead.

Copper, a metal which ranks industrially with iron in its importance, especially in view of water power development and construction of high-tension transmission lines from the streams to the manufacturing sites, is found widely distributed throughout the state, the mining districts of the Cascades and of northeastern Washington having been considerably explored. Encouraging outcrops of sulphide deposits, with chalcopyrite predominating, have been located on thousands of claims. Their development to the stage of bonanza producers must wait on transportation facilities that will insure economic handling to the reduction works, for in the copper world evolution has been toward treatment in great volume of comparatively low-class ores as a result of marked metallurgical progress.

Until transportation systems have been installed to move the lower-grade yield to the smelters, shipments have been limited usually to the richer ores which can pay for freighting even under the handicap of remote location in the mountainous regions, leaving the other ore bodies in sight for future working.

The counties in which copper properties have been active are Snohomish, Stevens, Okanogan, Ferry, Pierce, Skamania and Asotin, with exploitation also in Chelan, Skagit, Whatcom, Pend Oreille and others. The state's yield, even under the system of production necessarily limited to selection only of the higher-grade ores, has passed the mark of 2,500,000 pounds annually.

Lead has been mined in considerable quantities, with the foremost properties located in the northeastern part of the state, the production in pounds more than doubling the figures for copper. The smelter at Northport has been a factor in encouragement of larger production. Zinc also has attractive possibilities with the perfection of new methods of treatment, electricity having been utilized with marked success in its refining.

Other metallic products include arsenic, a by-product of the Tacoma smelter from arsenopyrite found in several of the mining camps; antimony; tungsten; and molybdenite. Some mercury ore has been located, and traces of tin have been found in the vicinity of Spokane.

Production of these minor metals was stimulated during the war by the demand for them as alloys in manufacture of ordnance steel. Cessation of hostilities ended the urgent call, but the future is one of large possibilities for these materials as new developments are effected in the iron and steel industry. They are destined to command constant and growing consideration in experiments and accomplishments along new lines of electro-chemistry and electro-metallurgy.

Of foremost significance in the future of the State as a center of metallic importance is its relation to Alaska, which keeps in touch with America through the ports of the Evergreen State. The commonwealth and the territory have maintained a community of interests, of enterprises, of endeavors and of ideals throughout the entire period of Alaskan development. The gold which attracted the first great rush to the northern wonderland has been brought out by this route, the

assay office in Seattle having received a quarter of a billion of dollars from the placer beds and lodes of the fabulously rich region.

The wide distribution of the placers, which have been worked by pan or dredge, has warranted extensive undertaking of quartz mining. Among the large undertakings have been those of the Treadwell Company, which ran its levels, stopes and drifts out under the ocean, until later flooding of some galleries forced their abandonment; the Alaska-Gastineau and Alaska-Juneau, with mining and milling capacity of more than 9,000 tons daily at the lowest costs ever attained in the industry.

Alaska is generally recognized as one of the world's great copper fields, production having reached a big scale in three widely separated belts—Prince of Wales Island in the Southeast, Prince William Sound in Southern Alaska, and Chitina in the Copper River interior. In the latter district the great Kennecott Mine has attained fourth rank among the greatest producers of the world, with an annual output in excess of 120,000,000 pounds, leading all competitors in low cost, between 65 and 70 per cent of the figure for the second in the list.

Other mineral deposits of the northern territory include silver, found with the copper and gold in quartz veins, iron, tin, antimony, tungsten, lead, graphite, cinnabar, platinum and molybdenum, besides marble, gypsum, barytes, coal and oil.

The iron deposits located include magnetite in southeastern Alaska, hematite on the Seward peninsula, and chrome ore on Kenai peninsula. These deposits are destined to play a big part in the promotion of the iron and steel industry in the manufacturing centers of Washington, just as copper has done with the development of smelting at Tacoma. They are available by cheap and safe deep-water transportation from the field to the reduction works, where advantages can be improved in the way of ample fuel and power supplies.

Reciprocally the development of the natural resources through exploitation and constructive utilization of the raw materials will contribute to the common prosperity of Washington. Employment and opportunity will be provided for thousands who will be potential customers of the industries that will be based upon the products of their toil and enterprise. New and advancing stages of prosperity will be reached through progressive undertakings, that are, in the last analysis, but the spirit that inspired the first pioneers, maintained in ever-expanding application.

Note.—I am indebted to the painstaking investigation made by Mr. Maurice FitzGerald for the completeness of the information contained in this chapter on mining.—E. M.

CHAPTER XXXV.

Coal

Importance of Coal in Economic Advancement—Only Valuable Veins On Coast—Becoming More Important Than Ever—First Discovery—A Stimulant To R. R. Building—Found East and West of Cascade Range—Available Supply—Principal Competitor—Economic Asset of Increasing Value—Alaska Coal Fields Complementary to Those of Washington.

One of the greatest economic developments of all history has been the gigantic growth and expansion of the iron and steel industry. Side by side with this have gone the coal-mining enterprises to furnish the supply of fuel indispensable for operation of the great furnaces that have made America the leader in steel. In fact, industrially the period that reached its climax in the organization of the corporation heralded as the greatest ever known when it took over the Carnegie and other holdings, is almost as intrinsically an age of coal as an age of steel. The importance of coal under present economic conditions is attested by the prominence which this item has commanded in the negotiations following the world war, and its inclusion among the leading commodities on the list of reparations.

Our own Puget Sound region is vitally interested in this phase of industry, for here are found practically the only extensive commercial coal veins of the Pacific Coast of the United States. Reference is made elsewhere to the possibilities of the future in the way of hydro-electric heat as well as power for developing industries; but in the realms of metallurgy and navigation this must be largely an evolution through experi-

ment for a long time to come, and immediate consideration of installing furnaces on the Pacific Coast to turn out the metals which its mines and those of the hinterland can furnish will be swayed largely by the demonstrated fact of an ample coal supply close at hand.

Attention is to turn all the more to this resource as the supply of fuel oil appears to be reaching exhaustion through the growing demand for gasoline and naptha, calling for advanced methods of refining that will lessen the available amount of crude petroleum which for a time seemed destined to prove destructive competition for the coal industry on the coast. As this supply dwindles, the installation of new processes for using pulverized coal, with all the advantages claimed especially for crude oil, will increase the importance of the carboniferous veins, and will figure especially in smelter furnaces. It makes stoking almost automatic, and as easily controlled and regulated as the oil burners.

In 1851 a vein of coal was discovered under what is the present site of the city of Bellingham by a representative of the Hudson's Bay Company, who was hunting timber for that corporation. A mine was opened, and from it were shipped the first cargoes from Puget Sound to San Francisco. The bed of coal was followed out under the waters of the Sound from the shaft. The property was a producer for a quarter of a century; then it became flooded following a fire. The annual coal output of Whatcom County then ran between 5,000 and 6,000 tons for many years, until 1919, when new properties were uncovered, one within the city limits of Bellingham, which has a capacity of 400 to 500 tons a day at its present stage of development.

In Washington, however, coal means something more than an important economic resource; it is a tradition tied up with the history of pioneer struggles and cooperation in upbuilding of civic enterprise. One of the

first displays of the conquering and accomplishing "Pioneer Spirit" was given in the early development of the coal mines at Seattle.

The history of the early companies and undertakings is told vividly in his history of Seattle by Clarence B. Bagley, who devotes a special chapter to coal mining with interesting details and authoritative records.

The first settlers soon realized that while manufacture of lumber was to be the first development in point of time and importance, this was an undertaking that should be supplemented by the development of all other potential resources in order to assure an expanding and permanent prosperity for the Puget Sound region. Coal attracted attention through the discovery by D. M. Bigelow of outcroppings in King County on the Black River, almost at Seattle's doors, in 1853. Lignite outcroppings worked in 1848 on the Cowlitz River are recorded. The first early shipment to other markets was that from the Black River veins to San Francisco, where a schooner load found ready sale, and led to a series of options by California capitalists, who were later suspected by the Washington pioneers of utilizing this plan for retarding development of the Puget Sound mines in competition with some small properties which they were trying to open on San Francisco Bay.

At any rate the proposition lay dormant for more than a decade; then a local company was formed to work the Coal Creek deposits, bringing the coal to Seattle by barges on the Black River. This was in 1865-66, and four years later the reorganized company adopted a plan of loading coal on cars at the mine, transporting them on tramways that alternated with car-carrying barges on Lake Washington and Lake Union; bringing the cars finally to a trestle over deep water from which they could be discharged directly into the waiting ships.

The search for new deposits naturally extended to other parts of the Puget Sound country, Pierce and

Kittitas Counties occupying a prominent place in the industry. It is reported that the existence of veins on the Puyallup River in Pierce County, suspected from the finding of black particles, was confirmed when a huge cottonwood tree, dislodged during a flood, came floating down the river with a chunk of coal clinging to its roots. The coal-bearing area of this county extends from north to south, the northern part being designated by the geological survey as the Wilkeson-Carbonado field, and the southern as the Puyallup-Ashford field. The Pierce County coals are found especially adapted for coking, the smelters furnishing an available market for this product.

Kittitas County, east of the Cascade range of mountains, furnishes from the Roslyn field about half the present output of the state. The coal beds extend from Cle Elum to Beekman, about 2,000,000 tons a year being shipped through the former city, which is the gateway of the field. The city of Roslyn is built directly over two mines, which have miles of tunnels running beneath its lots and streets.

These pioneer steps marked the beginning of the industry in Western Washington which has grown to a point where a yearly output of more than 4,000,000 tons has been reached, with four transcontinental lines and a coast railroad to serve as distributors, and great bunkers on the waterfronts of Seattle and Tacoma running up to a capacity for loading into vessels, equal to all demands.

Of the available coal supply the state geologist, Dean Henry Landes, of the University of Washington, says:

The coal fields of Washington are among the best to be found in the northwest. They lie principally in King, Kittitas, Pierce, Lewis, Thurston and Whatcom Counties. Nearly all of the coal areas are served by railroad lines, so that ready transportation is assured. The coal varies from a lignite through the various grades of bituminous coal. Prior to this time the prin-

cipal demand has been for the bituminous coals, lignite being mined in a lesser degree. With the growing use of pulverized coal for steaming purposes, it is confidently expected that the lignite coals will be in far greater demand. As a rule the coals of Washington are of easy ignition, produce a hot flame and burn very freely. They have a small amount of sulphur and a moderate quantity of ash and water. The beds as a rule are thick and several of them are frequently mined at the same place.

"The principal foreign competitor of coal is oil, from California and elsewhere. The chief local competitor of coal for industrial purposes is the abundant water power which the state affords. At the present time, the price of oil is rising rapidly and many industrial plants are now planning to use coal for fuel. It is probable that the output of coal will be greatly increased if the prices of oil continue to rise and it becomes increasingly difficult to obtain. The coals of Washington are quite satisfactory for all fuel purposes. There are large reserves of this fuel as yet untouched. There is no question but what any industry depending upon coal will be able to find in the coal fields of this state an ample supply for a great many years."

Recent developments have indicated the speedy elimination of fuel oil as a practical competitor, as is indicated by Dean Landes. In the interim that may be expected to elapse before the fullest development of water power for heating as well as power purposes, the coal veins of Washington may be expected to prove an economic asset of increasing importance, with a prosperity that will be a monument to the foresight of the pioneers who first undertook their development, and co-operated to secure for them a share of the world's markets.

Incidentally the coal fields of Alaska may be considered as complementary to those of Washington, as

Puget Sound is the nearest and the natural gateway for that territory of as yet undeveloped resources. Federal action has been taken toward opening the great deposits of the north, with coaling stations on the coast that will be an important consideration for the merchant marine plying the routes from Puget Sound to the Orient. The combination promises to the Pacific Northwest the domination of the fuel situation on the Pacific for many years.

CHAPTER XXXVI.

FISHERIES

Author Sees Salmon First Time—Fish Story—Immense School—First Attempt Commercializing Salmon—Art of Canning Unknown—Drying and Pounding By Natives—First Cannery Established on Columbia River—Business Grown to Huge Proportions—Large Army of Employers—Note of Warning Sounded—Fisheries Being Depleted—Remedial Legislation Needed—Isaac Walton's Disciples Need Have No Fears—Hatcheries of Great Benefit.

I first saw a salmon in 1852 at "Salmon Falls" of Snake River, near seven hundred miles from the sea. These falls defied the fishes' farther-up-stream progress; hence the name, and hence the vast numbers in the waters; go farther up the river way they could not; go back they would not, but lingered, until finding a riffle upon which to spawn; then having fulfilled their destiny, they died.

The year following, in June of 1853, when I procured a fat, fine specimen, probably a Chinook or steelhead, just caught by an Indian trolling in the deep sea-water of Commencement Bay—now the waterfront of the great City of Tacoma, then a solitude, except for the native tribes—and put it in the pan and soon compelled to empty part of the fat and afterwards ate it, I thought it was the most delectable morsel of food I had ever tasted. I think so yet. The salmon, to my mind, is the "King of Fish." While there is a great field here for the sportsman, it is of the commercial value I will write in greater part.

In early days there seemed to be an inexhaustible supply of fish. I quote from my own writing twenty years ago, which although once in print, will be just as

fresh reading for the present as for the past. "But all such incidents must have an end, and so the time came when we broke camp and pulled for the head of Whidby's Island, a few miles off to the northwest."

And now I have a fish story to tell. I have always been shy of telling it, lest some smart one should up and say I was just telling a yarn and drawing on my imagination, but "Honor bright" I am not. But to be sure of credence, I will print the following telegrams recently received, which, as it is printed in a newspaper, must be true:

"Nanaimo, B. C., Friday, Jan. 29, 1853.—Another tremendous destruction of herring occurred on the shores of Protection Island a day or two ago in exactly the same way as took place near Departure Bay about three weeks ago, and today the entire atmosphere of the city carries the nauseous smell of thousands upon thousands of tons of decaying fish, which threatens an epidemic of sickness.

"The dead fish now cover the shores of Protection Island continuously for three miles to a depth ranging all the way from fifteen inches to three feet. The air is black with sea-gulls. So thick have the fish been at times that were a fishing boat caught in the channel while a shoal of herring was passing, the rush of fish would literally lift the boat out of the water."

"We had not proceeded far before we heard a dull sound like that often heard from the tide-rips where the current meets and disturbs the waters as in a boiling caldron. But as we approached the disturbance, we found it was different from anything we had seen or heard before. As we rested on our oars, we could see that the disturbance was moving up toward us, and that it extended as far as we could see in the direction we were going. The sound had increased and become like the roar of a heavy rainfall, or hailstorm in water, and we became aware that it was a vast school of fish moving south, while millions

were seemingly dancing on the surface of the water and leaping in the air. We could sensibly feel them striking against the boat in such vast numbers as to fairly move it as we lay at ease. The leap in the air was so high as to suggest tipping the boat to catch some as they fell back, and sure enough, here and there one would leap into the boat. We soon discovered some Indians following the school, who quickly loaded their canoe by using a barbed pole as a paddle and throwing the impaled fish into their canoes in surprising numbers. We soon obtained all we wanted by an improvised net."

At the headwaters of a short creek emptying into the Puyallup River, which in turn in a few miles poured its accumulated water into the tide water of Puget Sound, I have seen the salmon so numerous on the shoal water of the channel as to literally touch each other. It was utterly impossible to wade across without touching the fish. At certain seasons I have sent my team, accompanied by two men armed with pitchforks, to load up from the riffle for fertilizing the hop fields, where brick blocks of the City of Puyallup now occupy the space.

We all thought, like many farmers thought of their lands, that the soil was inexhaustible, so the belief was prevalent that the supply of fish would continue forever. The history of the salmon fishery has proven the fallacy of this belief.

In the year 1833, the Puget Sound Agricultural Company, an English corporation—a decoy of the real interest, the Hudson's Bay Company, with headquarters in London, built Fort Nisqually, a point the reader will more ready locate in mind, by saying it was about equi-distant between where Tacoma and Olympia have subsequently been built, and near the east shore line of Puget Sound. The first commercial salmon fishing in the state dates from this Company's effort in salting salmon and shipping to distant parts. About the same date, an intrepid pioneer, Samuel J. Wyeth, attempted

to establish the business on the Columbia River, but failed in the undertaking.

At this early date the art of preserving salmon by canning was unknown. The Indians at The Dalles of the Columbia from prehistoric times practiced a process to preserve the salmon without salt or can, by the manufacture of pemmican. The process consisted in first removing the bones, drying the fish, then pounding up fine and packing solid in baskets or bales of grass matting. The process is particularly described by Lewis and Clark in their journal, as they passed The Dalles of the Columbia, October, 1805. The immense quantity of this product is indicated by this quotation taken from the diary of the Lewis and Clark Expedition:

"On which there were such quantities of f i s h that we counted twenty stacks of dried and pounded salmon—twelve of these baskets, each of which contains from ninety to a hundred pounds, form a stack, which is now left exposed until sent to market. The fish thus preserved are kept sound and sweet for several years. We observed, both near the ledges and on the rocks in the river, great numbers of stacks of these pounded fish."

Washington Irving, in his "Astoria," commenting upon this report, says:

"Here is the great fishing place of the Columbia. In the spring of the year, when the water is high, the salmon ascend the river in incredible numbers. As they pass through this narrow strait, the Indians, standing on the rocks or on the end of wooden stages projecting from the banks, scoop them up with small nets distended on hoops and attached to long handles, and cast them on the shore.

"They are then cured and packed in a peculiar manner. After having been opened and disemboweled, they are exposed to the sun on scaffolds erected on the river

banks. When sufficiently dry, they are pounded fine between two stones, pressed into the smallest compass, and packed in baskets or bales of grass matting, about two feet long and one in diameter, lined with the cured skin of a salmon. The top is likewise covered with fish skins, secured by cords passing through holes in the edge of the basket. Packages are then made, each containing twelve of these bales, seven at the bottom, five at the top, pressed close to each other, with the corded side upward, wrapped in mats and corded. These are placed in dry situations, and again covered with matting. Each of these packages contains from ninety to a hundred pounds of dried fish, which in this state will keep sound for several years.

"We have given this process at some length, as furnished by the first explorers, because it marks a practiced ingenuity in preparing articles of traffic for a market, seldom seen among our aborigines. For like reason, we would make special mention of the village of Wishram, at the head of the Long Narrows, as being a solitary instance of an aboriginal trading mart, or emporium. Here the salmon caught in the neighboring rapids were 'Warehoused' to await customers. Hither the tribes from the mouth of the Columbia repaired with the fish of the seacoast, the roots, berries, and especially the wappatoo, gathered in the lower parts of the river, together with goods and trinkets obtained from the ships which casually visit the coast. Hither also the tribes from the Rocky Mountains brought down horses, beargrass, quamash, and other commodities of the interior. The merchant fishermen at the falls acted as middlemen or factors, and passed the objects of traffic, as it were, cross-handed; trading away part of the wares received from the mountain tribes to those of the rivers and plains and vice versa; their packages of pounded salmon entered largely into the system of barter, and being carried off in opposite directions, found their way to the savage hunting camps

far in the interior and to the casual white traders who touched upon the Coast."

I visited this "mart of trade," now a deserted village, during the year of 1910, and doubt not that there had been an immense traffic of this prepared salmon in early days. A station on the line of the Great Northern railroad under a different name "Spedis" now occupies the site. An effort to restore the original name "Wishram" failed because of the lack of interest in pioneer days by the authorities of the railroad company.

In 1861, six hundred barrels of salmon packed in salt at Oak Point on the Columbia River, seems to have been the first successful venture in the state. Five years later, William Hume established the first cannery on the northern coast at Eagle Cliff, on the Columbia River, which is in this state. From this modest beginning of packing—4,000 cans the first season—the great business of canning salmon has sprung, until now the number of cases on the coast has totalled past the three hundred million mark.

The industry that followed has had its "ups and downs;" that is, large fortunes have been made and lost, but the world has wonderfully profited by the work of this pioneer demonstrating the possibility of this method, which, of course, has been greatly improved over the crude way. The principle, however, has remained the same.

I visited Mr. Hume's cannery four years later, 1870, to collect data for the work "Washington Territory West of the Cascade Mountains," which in facsimile form is reproduced under this cover.

L. H. Darwin, the Fish Commissioner of the State, reports that in the last thirty years there has been taken from the waters of the state nearly $300,000,000 worth of salmon, and that during the biennium (1918-1920) just closed, the catch of salmon reported by the

fishermen was 27,741,295, of a value as they came from the water of over fifteen million dollars, and when prepared ready for the market in cans, barrels, or frozen, nearer thirty millions.

Mr. Darwin sounds a note of warning in these words: "No honest person, familiar with the facts, will attempt to deny that the fisheries of the State of Washington are being depleted," and points to the remedy in more efficient laws to prevent over-fishing and the taking of immature salmon.

Instead of a few hundred fishermen engaged seventy years ago, now there is an army approximating fifty to sixty thousand in this state alone, either as fishermen or in preserving or marketing the product.

Instead of one struggling cannery with a capacity of a few thousand cases in a season's catch we find eighty, with a capacity of over two million cases annually, of 48 pounds each.

A summary of the canned salmon pack, 1920, of the Pacific Coast as reported by the "Pacific Fisherman," published at Seattle, follows:

Alaska	4,395,937 cases
Puget Sound	166,520 cases
Columbia River	481,545 cases
British Columbia	1,187,616 cases

These figures show a marked falling off of the product from previous years, not the same proportion in all localities or all species, but sufficiently noticeable to call out from the authority quoted the caution: "There is no indication that this shortage was due to overfishing and it can only be attributed to unfavorable conditions beyond the knowledge of man; but great caution will no doubt be necessary to prevent the temporary shortage from becoming permanent."

The lamentable fact is, our fisheries have been exploited to the near danger point of ruin—in consider-

able part by a foreign element whose only interest is an immediate gain without care for the far reaching injury and eventual destruction of the industry.

Energetic efforts of the State authorities have been made to increase the production by establishing hatcheries in various vantage points. Unless more stringent laws governing this great asset are enacted, we will have reached the peak of production and permanently started on the down grade.

Of trout there is a more cheerful outlook. The disciples of Isaac Walton need have no fear that there will not be an abundant supply in the future as in the past.

The State Fish Commissioner in recent years utilized the extensive salmon hatcheries to replenish the supply of trout, culminating in the production and wide distribution of 20,239,507 eggs during the season of 1918, reaching each of the thirty-nine counties of the State; by adding what here is known as steelhead salmon and also as the silver trout, which is a landlocked sockeye salmon, the sum of trout eggs distributed will reach the enormous total of 32,000,000 during the one year.

CHAPTER XXXVII.

Trade and Shipping

From Early Settlement Shipping Trade Important—California Furnished a Market—Square Timbers and Piles in Demand —Then Surplus Agricultural Products—Trade With The Orient Growing—Domestic Trade Kept Pace With Foreign— Panama Canal Increased Trade Volume—In Pioneer Days Water Transportation Only Available—Abundance of Timber Induced Ship Building—Gigantic Ships Ply to Every Continent—Flags of All Nations Will be Seen Here.

From early days of Washington's settlement its shipping trade has been an important item of its industrial life. The pioneers found conditions awaiting which made their undertakings somewhat different from those of the first settlers who ventured west from the Atlantic to conquer the wilderness of the inland valleys. The rush to the California gold fields created markets for products of which a supply was found in Western Washington as the territory came to be known after its creation from Oregon territory. Almost from the time the first parties established themselves along the waters of the Sound they found demand for these products and lumber-carrying vessels plying along the coast to transport them.

At first hewed square timbers and piles opened a field for private enterprise. No questions were asked and public land was invaded without hindrance; even cordwood became quite an item to ship to the San Francisco market and served well to fill odd corners in the ship's hold. Ship's knees became a favorite article of industry and was supplied to the full extent of market demands; hand made shingles ditto; hazel hoops; barrel staves, all contributed to the aggregate.

It would seem incredible the bulk of these articles supplied by the comparatively few pioneers. The old story of "Hoop poles and pumpkin" of the early middle west was duplicated here (minus the pumpkins). The poles were cut on the claim of the pioneer or adjacent public land, split and shaved under shelter and often in the night, all of which could be done at home. The same may be said for the hand-made shingles. For both of these, there seemed to be an unlimited demand and ample shipping room in the numerous vessels seeking cargoes of lumber and piles.

A few years later the pioneer farmers produced a surplus of grain and vegetables that found ready market, supplemented by beef (to Victoria), mutton, wool, oil and finally hops. Of this last article twenty million dollars worth was shipped from the territory before statehood was acquired.

While these articles of trade were not of great value according to their bulk, or large in quantity, yet the aggregate constituted a substantial source of revenue to the vanguard of settlements.

Lumber shipments soon assumed quite large proportions but that interest, to a great extent centered in companies with headquarters in San Francisco and out of touch with the scattered home builders of the new territory.

Until their farms were opened, from which a surplus could be produced, the pioneers often were compelled to join with the majority to provide ready money for pressing present needs either in the mills or logging camps or some enterprise of their own as a side issue.

And so all in all, the "pickups" of the beginning of trade forecasted what would follow. While from a few thousand dollars a year as at first to over two hundred million dollars per annum as I write is a vast stride, yet it may be said the pioneers felt as much pride

in their work as the millionaires of today enjoy in their great achievements.

The coming of the transcontinental railroads gave new impetus to trade by establishing the ports of the state as gateways to the transpacific countries, and to Alaska when the lure of gold opened that territory to its first big tide of immigration. Later the opening of the isthmian canal across Panama brought a new impetus to water transportation between the Atlantic and the Pacific, with considerations of distance and sailing time as considerations for giving the Washington ports preference over any others in the United States.

This advantage is one to be demonstrated by measurements across the Pacific on a globe, rather than on a Mercator projection map; on the latter the plane surface effects an exaggeration of distance in the northern latitude. On the globe a string stretched from a Washington port to the ports of the Orient will form what is called the "great circle" route, passing in a practically straight line past the Aleutian islands, although on a flat map it would appear to run northwest and then southwest in a curve because of the distortion due to arbitrary drafting of the lines of latitude and longitude.

From Puget Sound to Yokohama this route is 271 miles shorter than the most direct way from the nearest of California ports, to Vladivostok 203 miles shorter, a saving in time of one to two days, according to the speed of the vessel.

This is bound to prove a weighty consideration in the future of the merchant marine with the keen competition that is indicated in coming years. The saving in time will result in more trips annually, with increased earnings made possible, besides savings in fuel, crew's wages and maintenance for each trip. In addition to this the Washington ports, through public establishment of great terminals, equipped with the finest mechanical devices known for speedy discharge of cargo and loading

of outward bound commodities, have lowered the time of the steamers in port, making a quick turn around a possibility for further increasing the service of transportation. Seattle, Tacoma, Everett and Bellingham already have public port properties operated by elective commissions, as have the Grays Harbor terminals. The Port of Seattle is now operating the largest commercial pier in the world, half a mile long and 367 feet wide, with one almost equally as large alongside. They are devised especially for the handling of Oriental trade, with terminals for passenger lines plying across the Pacific, and with equipment for handling heavy freight expeditiously. The port has other docks and warehouses along the waterfront for handling and storing special commodities that figure in its commerce.

Tacoma has adopted a comprehensive plan for development of its port, to give five miles of berthing space along a unified system of wharves and warehouses, with 1200 foot piers alongside deep waterways. The centrally located tract that is under improvement has a deep-water frontage of three thousand feet and a depth of four thousand five hundred feet. The mechanical equipment will be adapted especially to handling lumber and other heavy commodities of export.

Everett and Bellingham have voted for the establishment of port commissions and development of properties, and the plans proved by experience in the other ports will be generally followed, with such modifications as may be needed to meet the local conditions of topography.

On the Pacific coast proper, Grays Harbor and Willapa Harbor are points of huge traffic, especially in lumber and fish shipments.

Export and import trade of the Washington customs district, which includes all the ports of the state, reached its high water mark during the war, when the New York district was the only one to exceed it. The advantageous location for transpacific trade was demonstrated beyond argument by the fact that more than fifty per cent of

all the commerce from the entire Pacific coast of the United States passed through this gateway. The total figure fell only a little below six hundred million dollars for foreign imports and exports, and in this was not included the receipt of raw silk and other commodities received in bond for collection of customs at the point of release in the east; this amounted to an additional $175,000,000 in round numbers.

Among the principal items of import are raw silk and furs from the Orient, vegetable oils, for which there is a heavy demand as ingredients in soaps and edible products, crude rubber and ores. Articles leading in the export figures are cotton and cotton goods, iron, steel and machinery, lumber, flour, wheat, and fruits.

Lumber, wheat products and fruits are produced in Washington, but the other manufactured products come to this gateway by rail from industrial centers of the east, the raw material in many instances having been imported by the same route, involving the economic loss of double transportation from tidewater and back. Logical consideration of what this means is a matter that is being emphasized in urging location of industries in Washington, where there is unlimited power and ideal climatic conditions for iron and steel mills, textile establishments, rubber making, soap manufacture and other undertakings that utilize vegetable oils, furniture plants to work into the finished products the native lumber of Washington and the rare hardwoods of the Transpacific tropics.

The commercial figures of peak days during the war are regarded as abnormal with some reaction toward old conditions and return to old channels of trade. But it is reasonable to attribute the decline in figures more to unsettled conditions abroad, the industrial depression of Japan, the chaos in Siberia, and the unfavorable agricultural conditions of a couple of years in China. When normal conditions are restored in these countries the potential market for American goods, to be exchange for the raw materials produced by these coun-

tries in unlimited quantities, will eventually assure a commerce beyond any figures yet attained, and it is for this future that the Washington ports are building.

Domestic trade from this region has kept pace with the foreign. From the time of the first shipments made by mills and fisheries, the coastwise traffic has been constant. In addition the products of Alaska have come by water shipment through Washington, the trade amounting to more than $100,000,000 yearly even under conditions that have handicapped the development of the territory because of federal bureau control and conflicts without a unified policy. With adoption of a program that will insure a stable citizenry in Alaska, the domestic trade in and out of its principal centers will rival the aggregates for foreign shipments over the Washington docks.

To European ports, and to the markets along the American Atlantic coast the Panama Canal is a contributing cause in a growing commerce. Within the last year innovations have been established in the way of refrigerated space on shipboard for carrying fresh fruits from the orchards of Yakima and Wenatchee and the Puget Sound country to New York and London by direct lines. Feasibility has been demonstrated to a degree that seems to insure continuance and to work largely toward building up a new prosperity for the Washington horticulturist. Salmon and other fish products, lumber, grain, flour and other food products of the northwest for which there is crying need on both coasts of the Atlantic during days of reconstruction are available for cargoes in quantities which have led to establishment within the past few months of regular service by many of the strongest and best known shipping lines of the world.

It is inevitable that new manufacturing industries will spring up and grow rapidly within the next few years, adding their products to the volume of trade through the ports of Puget Sound and the harbors on the Pacific. There is reason to predict that Washington, with a location analogous to that of Great Britain on

the Atlantic, with even more favorable climate than England has, will eventually equal or surpass the records in commerce made by Liverpool and Manchester, London, Birmingham and others that had part in bringing trade supremacy of the last century to the Anglo-Saxons.

Shipping

From the earliest days of the pioneer settlements in Western Washington the waters of Puget Sound and its tributaries furnished the principal highway for transportation about the region, as they had for the native Indians. A large percentage of the land was so covered with the dense growth of timber as to offer nothing more than footpaths and obstructed trails; hence travel was almost wholly by canoes plying the great stretch of waters in search of choice locations along the shores of Puget Sound.

From the native type of craft it was an inevitable and early step to larger construction; the abundant supply of timber for building boats was quickly utilized by the men from the east, among whom were numbered many of previous experience in construction and navigation of sailing vessels. Shipbuilding was an early supplement of the lumber industry of the Territory.

The trail-blazers who came to the state found Olympia and Steilacoom accessible by highways, but beyond these places there were only the dense forests and the waters of the inland sea. So their early settlements were along the waterways on which their craft could ply, and shipping was an incident of their lives almost from the first. They found markets for their produce and for the squared timbers and piling in the cities of California as a result of the rush for gold which had brought thousands of adventurers from the east. The mails from the east for the Pacific coast came by ocean steamer to San Francisco by way of the isthmian route, and similar craft brought them to Puget Sound and Portland as distributing centers for the settlements in this region. Postal service between the different localities of the sound

country was also by boat, and the weekly papers which gave intelligence of doings in the outside world found the mail boat as important an ally as the metropolitan daily of the present age finds the fast mail train, or possibly as that of tomorrow will find the airplane.

The first export business, coastwise domestic trade as it would be classified today, of which shipping records have been preserved, was a cargo of piles, completed with the aid of a yoke of oxen driven along the beach from Puyallup; it went to San Francisco in the winter of 1851-52. About the same time, tradition has it, another ship came from California commissioned to take back a cargo of ice from Puget Sound, indicating that the illusion of arctic weather in the comparatively high latitudes prevailed in those days just as it still does in some parts of the east that do not yet realize the tempering effects of the warm ocean current along the Pacific coast. But although the master of this "windjammer" some seven decades ago was disappointed to find no frozen stretches along the Sound, he did find a profitable cargo awaiting him in the way of timber, and the owners were convinced when he returned that the voyage was satisfactory. After the Yesler steam sawmill started operations the squared timbers, piles, and ships' knees were supplemented by other varieties of lumber, while an early commerce was established in products of the farms which were in demand among the gold hunters.

One of the most comprehensive and interesting chapters in Clarence B. Bagley's history of Seattle deals with the fleets of those days, giving a list of vessels and many incidents of their history.

As early as 1853 regular calls had been established and by the next year four lines were operating between the Golden State and the Sound, and about the same time the steamer Fairy, operating under the American flag, began regular service on Puget Sound from Olympia to points northward. The steamer had been brought from San Francisco on a sailing bark. The mail contract was an important consideration for the boats, and

within the next few years there were many rivals seeking the business, with varying success and experiences. Competition resulted in slashing of fares and freight rates, until eventually the reduction of profits would bring about a readjustment, usually by buying out of rivals by one concern and the transfer of boats to other localities. One of the boats best remembered in this connection is the Eliza Anderson, which operated almost continuously for a dozen years, until her owner was subsidized to withdraw her from service and give a competitor the clear field for a consideration said to have been $1,500 a month.

The Fraser river gold rush of 1859 was a bonanza for the operators of shipping on the Pacific, and thousands were carried from the southern cities in quest of wealth. In consequence, regular schedules were disregarded, and every craft was utilized to pick up the eager passenger lists of argonauts, so the settlers did not have satisfactory service again until the rush was over and the beaches at the northern end of the sound were quiet once more.

By the early seventies the wheat fields of eastern Washington were contributing an increasing tonnage for water transportation to the southern market, the coal fields of the Sound country were operating in volume, and the fish and lumber trade increased steadily to load the ships. Construction grew steadily, with sailing vessels predominating in the shipyards. Nine sailing craft were reported loading in the harbor of Seattle at one time in 1875, three with coal from the Newcastle mines, four from the Renton mines, and two with lumber.

In 1877 the Pacific Coast Steamship Company was organized, later being merged with the Admiral line as the Pacific Steamship Company, which in the present year, 1921, inaugurated the first transpacific passenger steamship service from Puget Sound under the American flag, with 2100-ton vessels of the United States Shipping Board, palatial steamers 535 feet long, with luxuries of equipment and completeness of service equal to the best on the Atlantic.

Shipping increased steadily during the following years, until the discovery of gold in Alaska in the late nineties opened a new commerce to the northward, with establishment of regular lines to the territory whose products come by water to the Washington ports, and whose mercantile supply goes northward by the same route.

During the years that this traffic has been developing the opening of the oriental markets has progressed, and some of the greatest of the Japanese lines have made their terminus on Puget Sound for vessels that reach 21,000 tons displacement. One of the most important developments of this trade was the building of two gigantic freighters by the Great Northern company, the "Minnesota" and the "Dakota" being rated as the largest of American freighters. The "Dakota" was wrecked off the Japanese coast and was not replaced, but the "Minnesota" operated until the war, when it was taken to the Atlantic for transport service and did not return to the Pacific.

Rapid and extensive as have been the developments noted in this summary and in the chapter on trade, the immediate future appears to have in store a growth of shipping that will be of even greater import. Full utilization of the Panama canal for intercoastal and transatlantic trade, when the settlement of the tolls question shall have established a stable and permanent basis, will work many and vast changes in the routes of trade. Already some of the older foreign lines are establishing service to the Pacific coast, with refrigerating equipment for transporting the fruits and food products to the markets of Europe. Under the American flag, similar service is reaching the Atlantic coast of the United States. The standardized 8,800 ton and 10,000 ton freighters turned out by American shipyards during the war are plying to the four quarters of the globe with Washington products under the Stars and Stripes. Huge vessels rated up to 15,000 tons have been announced to ply from Puget Sound to British terminals. Steamship

companies of Holland and Scandinavia are in the same field, and when normal conditions are restored in Europe, bringing stabilization of money and parity of exchange to a point where commerce will be unimpeded, it seems a safe anticipation that the waters where once the Indian canoe was the only craft, and on which the pioneer white man laid the beginnings of fleets that would appear tiny beside one of the modern ocean-going vessels, will in a few years harbor daily innumerable ships flying all the flags that are known to the modern world.

IMPORTS AND EXPORTS BY PORTS IN THE CUSTOMS DISTRICT OF WASHINGTON—FOR THE YEAR ENDING DECEMBER 31, 1920

PORT—	Imports	Exports	Collections
Seattle	$82,337,232	$108,417,597	$3,756,402.17
Tacoma	30,436,422	61,059,130	990,348.05
Aberdeen	53	1,211,038	4,389.32
Blaine	11,297,651	9,938,752	58,701.85
Bellingham	622,998	1,905,385	3,693.44
Everett	3,573,229	1,711,159	113,821.65
Port Angeles	209,383	454,721	119,329.93
Port Townsend	172,337	628,438	121,353.25
Sumas	3,300,354	5,518,562	63,977.46
Anacortes	184,199	916,024	4,528.41
Chopaka	61,012	94,984	502.07
Danville	103,102	45,321	893.87
Ferry	7,412	21,832	1,522.11
Friday Harbor	82,605	107,587	2,754.99
Laurier	67,588	82,961	1,918.08
Molson	137,613	26,793	1,245.80
Northport	369,954	468,020	10,421.06
Oroville	20,524	50,716	216.94
Roche Harbor		5,485	179.66
South Bend		111,882	35.40
Spokane	1,440,460	47,884	65,320.30
Vancouver, B. C.			109.00

Movements of Vessels Year Ending Dec. 31, 1920—

Entrances			Clearances		
No.		Tonnage	No.		Tonnage
2519	American	1,293,598	2269	American	1,328,040
2222	Foreign	2,057,767	2323	Foreign	2,114,303

CHAPTER XXXVIII.

POLITICAL HISTORY

Thirtieth State—Part of Oregon Territory—Acquired By Discovery—But One Flag—Great Britain Disputed Right—Politician, What It Means—Different Types—First Officials—Not High Class—Effect of Civil War—Republicans Divided—"Big Bolt"—Disputed Boundaries—British Claim San Juan and Orcas Island—The Famous Pickett in Command—Hostilities Feared—British Bluffing—Arbitration Agreed Upon—German Emperor Sole Arbitrator—Settle In Favor Of U. S.—Col. Casey Fine Officer—Friend Of Pioneers.

Washington, the thirtieth State admitted into the Union, the fifteenth in point of area, a part of the Oregon country, contained when created as a territory (March 2, 1853) approximately 130,000 square miles, three-sevenths of the whole of the original Oregon territory.

Subsequently, and before admission as a State, Montana and Idaho, were carved out of Washington's part of the Oregon country, leaving the lesser stated area as recorded below.

The early history of Washington is so interwoven with that of Oregon as a whole, that both must be considered to give a full insight into the origin of the State and the early history of territorial life.

Oregon is the only portion of the United States acquired by right of discovery and occupancy with the distinction of never having had but the one flag, the glorious stars and stripes.

True, Great Britain for many a long, weary year disputed the title. The discovery of the Columbia River by Captain Robert Gray in 1792, the explorations of

Lewis and Clark, authorized by the United States Government in 1805-6, irrevocably established title from the 42nd to the 49th parallel of north latitude and from the summit of the Rocky Mountains to the Pacific Ocean.

"*Politician* N. 1—One versed or experienced in the science of government; one devoted to politics; a statesman.

"2.—One primarily devoted to his own advancement in public office, or to the success of a political party: —used in a depreciating sense; one addicted or attached to politics as managed by parties, I. E., of or pertaining to public policy, or to politics; relating to affairs of State.

"Politician—Cunning; using artifice; polite; artful.

"Politician—(a) Of or pertaining to policy, or civic government; political.

"Syn.—Wise; prudent; sagacious; discreet; provident; wary; artful; cunning."

In other plain English, a politician may be one striving to promote a local, state or national policy, with true altruistic motives, or he may be an unscrupulous schemer, intent only upon his own advancement in public affairs.

Abraham Lincoln was a politician; so was George Washington; so was McKinley and hundreds of thousands of prominent men who have gone before, in the better meaning of the word, else this grand nation would not have endured for a century past nor become the beacon light for liberty and just dealing between man and man.

On the other hand, the world has a Lenine of Russia and many others of like ilk to endure: We have had a Bryan and a Wilson to deal with and heed. I do not by any means cite these two prominent Americans to compare them with the modern Robespierre of Russia in methods and intent of purpose.

William J. Bryan is a politician, but no one questions his purity of motive; and yet, if he could have had his way, he would have plunged this nation into unutterable financial chaos that would have taken many decades to recover from.

The same may be said of Woodrow Wilson; no unprejudiced mind believes Woodrow Wilson was dishonest or believes that he was not altruistic in his motives.

I believe both of these prominent politicians were honest and sincere but both were handicapped, the one, as in the case of Bryan, by a consuming ambition for office, the other, as with Wilson, a boundless inordinate desire for fame; both are of a different type than defined in the quotations from Webster. If Wilson could have had his way, we as a nation, would now have been a part of the unutterable confusion of Europe with scant hope of being free from that calamity for many decades, if indeed, at any time.

And so, we have had, and have yet, three types of politicians; one altruistic with clear vision; a second, also altruistic but visionary; a third, an unscrupulous schemer for self and pelf.

Thirty-six years of territorial life brought with it a larger percentage of political derelicts than prevailed after statehood was acquired. The paying off of political debts by appointment brought a constant new supply of territorial office holders, with but very few exceptions, strangers to the territory and strangers to the needs of the country in which the political wheel of fortune had thrown them. With but few exceptions, these appointees were bright, and, as public sentiment ran, upright, honorable men; but were the victims of the faith inaugurated by Jackson, that to the victors belong the spoils. Cast into a strange political atmosphere, new appointees naturally looked the field over for friends and workmen, soon found congenial company in the coterie at Olympia formed at the very

beginning of territorial life to control, the emoluments of office and which finally became so powerful that none dare disobey its behests.

The lax election laws provided for an open vote that paved the way for control by employers and frequently descended a step further, to flagrant vote buying, made easy by the open saloon and too often by an open money consideration.

I do not wish to be understood as intimating that such control was general or practiced by the greater body of pioneers; undeniably though a true history of the time cannot be written and ignore the extent of these frauds, deplorable as they may be. We have not clean hands up to this day and age, nevertheless, the secret ballot has safe-guarded the vote and made fraud much more difficult and less common.

The great conspiracy resulting in the war of rebellion found its echo on the Pacific Coast; and nowhere, strange to say, more virulent than in Oregon and Washington, though perhaps less powerful and dangerous than in California where more concentrated effort could be made because of the larger city, San Francisco, as a nucleus.

A large contingent of the early pioneers of the Oregon country came from the slave holding State of Missouri and were victims of their prejudice against the negro imbibed in their home surroundings and of their belief—in the rights of the slave-holder. Notwithstanding this handicap, a large majority of this class were loyal to the government and opposed to slavery.

During the continuance of the rebellion a small contingent from all sections of the East of place seekers, unscrupulous politicians of the third estate; negro haters and haters of any person holding free soil principles (abolitionists as all such were branded) were clandestinely advocating a Pacific confederacy. So

dangerous this propaganda became that we were advised to keep our loyal men at home and quietly arm as best we could.

After the war of the rebellion closed and time passed and the republicans had come into control many of these doubtful loyal citizens flocked to the party in power and some of them sought and obtained high positions by combining with the Olympia clique, likewise existing under republican rule, following the overthrow of the democratic party.

The result was a revolt in the republican party in 1870 known here locally as the "Big Bolt," and an active campaign, which, however, resulted in defeat. Finally, two years later, the malcontents joined with the democrats, elected a democrat to Congress in 1872 and cleansed the republican political atmosphere for twenty years.

This was the first bolt from the republican party and like the great revolt of 1912, incidentally brought reform within the councils of the party.

It was my fortune, or if you please, misfortune, to be in both these revolts, and hope I never will be called upon again to administer rebuke in like manner; but can truly say that I have no regrets to utter.

To those who are not conversant with the history and geography of the Northwestern State of the United States, Washington, a brief introduction is necessary for a full understanding of what follows.

The Pacific Ocean waters, breaking in through the Straits of Juan de Fuca, the dividing waters between British Columbia and the United States, divides into numerous channels eighty miles east from the coast and surrounds numerous islands—forty or more, among which is the beautiful San Juan, a fertile picturesque land of great beauty and value. The treaty between Great Britain and the United States defined the boundary as following the forty-ninth parallel of latitude

to the Gulf of Georgia, should then run through "the middle of the channel which separates the continent from Vancouver Island and through the middle of the Straits of Juan de Fuca to the Pacific Ocean. There were numerous channels leading from the Gulf of Georgia to the Straits; England claimed one channel as the line that would include San Juan Island as English territory, to which our own Government firmly protested. This island, the largest save two of the group, and its twin sister Orcas, contained unlimited supply of lime rock that has made the group famous for the production of this article of commerce. On that fateful day, the question whether there would be war with Great Britain or continued peace hung in the balance. The settlement on the island by both English and American citizens led to friction and finally the killing of a pig by an American citizen belonging to an Englishman and the attempt to arrest the American by an English officer, brought a crisis that could not be ignored; hence the landing of American troops on the island.

The English Government under one pretext and another vaguely laid claim to the whole country north of the Spanish domain and West of the Rocky Mountains to the Russian possession in the North, all known as the Oregon country. Finding her claim wholly untenable, she receded to the Columbia River; when defeated in that under a glaring perversion of plain language of the Canal Haro, thus laying claim to San Juan and adjacent islands.

July 29, 1859, Captain George E. Pickett, who later led the fatal charge at Gettysburg that destroyed all hope for the success of the rebellion, landed with a company of United States troops on San Juan Island. Pickett's occupation of the island by American troops brought violent protests from the English authorities at Victoria, accompanied by threats and backed by the despatch of three war ships that lay in the offing with guns trained on his camp. Meanwhile the Ameri-

can force was speedily reinforced from Port Townsend and Steilacoom until nearly five hundred regulars of the United States army were entrenched on the island. A wave of indignation ran rampant over the people of the territory. We had for long years been badgered by the presence of the Hudson's Bay Company and its double, the Puget Sound Agricultural Company, claiming title to large areas of American soil. The author had some keen experience in having his title deed to his donation claim held up for nearly twenty years on account of this claim. The numerous flocks of the Company had eaten off the grass on large areas; some of their cattle had become wild and a perfect nuisance and so when the word passed that the English were trying again to hold American soil, small wonder that the fighting spirit of the pioneers was up and ill timed projects in the air. And so when Colonel Casey's detachment left Steilacoom for San Juan, a lot of us procured a steamer and followed him. Just what we proposed to do upon arrival no one had any plan and upon landing were told by our American military officers that we could not be of any service; advised us to return home and we followed the plan of the famous general who "marched his soldiers up the hill and then marched them down again." We saw, but did not conquer, and returned with colors flying but spirits drooping; the laugh was on us.

Not so with Pickett and his devoted men. A third British man of war had arrived and all three with guns trained on the devoted American camp, were in a position to render it untenable. He expected this to occur at any moment and planned to return the fire, then spike his guns and retire to the woods out of reach and sight of the ship's guns, but not to surrender. Every hour strengthened his position and when Casey landed with reinforcements and the entrenchments nearing completion, the relative strength of the opposing parties changed and there would undoubtedly have been a fight to the finish if once fire

had been opened by the British. The facts were, the British authorities hesitated, not feeling secure in their right and had attempted to run a big bluff on the American commander, which he promptly called with a firm hand on his colors. Hundreds of people came over from Victoria, some for curiosity, some belligerent, while a few exerted themselves to promote peace, but all, like the American civilian contingent soon "marched down the hill," when informed by their military authorities that if they remained somebody might get hurt. Excitement ran high and a narrow escape from open war with but one immediate certain result, the American force would eventually be defeated, with no possible way to receive further reinforcements or supplies. Finally arbitration was agreed upon joint occupancy by 100 troops of each nation followed, with camps a few miles separated that continued for three years until the dispute was settled in favor of the United States by the German Emperor, to whom the question was referred as sole arbitrator.

Looking back over the vista of years, I can realize, howsoever faded the memory, yet wonder how vivid small incidents continue in mind, the sage advice received from Colonel Casey, whom I knew well. Upon landing, the Colonel took command by right of seniority in rank. He did not expect to return from the Island alive, but to sell his life as dearly as possible if worst came to worst. Under his directions the rude fortifications begun by Pickett were strengthened and are visible to this day.

I had been drawn close to Colonel Casey during the Indian war four years before, and had repeatedly met him subsequently. At the outbreak of the war, nine settlers were massacred. A little boy, George King, five years old, was taken captive and held for six months or more and finally sent in by an Indian to Fort Steilacoom. Colonel Casey, then commanding the Fort, sent the child to me in the nearby village of Steilacoom, as he did not have a suitable place at the

Fort to care for him. The little fellow had almost forgotten his mother tongue, but could speak the Indian language. The Colonel naturally took much interest in the little orphan (both parents had been killed by the Indians) and visited him several times before he was sent East to his relations in Ohio. My own boy, about the same age, had acquired a smattering of the Indian tongue. The Colonel, overhearing the little fellows' Indian talk while playing could not help but be amused, but the incident brought forth unrestrained tears. Colonel Casey was a strict disciplinarian, but he had a heart within him as "Big as an ox," as we pioneers used to express it, and did all he could to aid the pioneers who were driven from their homes by the Indians.

CHAPTER XXXIX.

Prison Reform

Criminals Treated More Humanely Now—Much Remains to be Done—Scripture Quotations—What "Compensation" Means —No Prisons Here in the Beginning—With Laws Came Transgressors—The Contract System—Bad Results—State Control an Improvement—Much Remains to be Done—Suitable Employment Should Be Furnished—Jute Mill No Benefit.

The sins of omission are just as scarlet as those of commission. I approach the subject of prison reform with regret—I may say with sorrow—for my own sin of omission in not doing more than I have done to alleviate the sufferings of the criminals and combat the dangerous fallacy (to the community) that the criminal must be incarcerated primarily as a punishment for his crime.

As the average of life runs I have lived contemporaneously with near three generations and can truly bear witness to progress for a more humane treatment of the criminal, but far, very far, less than we ought to have done and far less than in other fields of morals and enlightened progress.

I would not have my readers conclude from what has preceded that I join with the sentimentalist that can see the wrong inflicted upon the criminal by our system, or rather lack of system, in their treatment and forget the greater wrong upon the community in which they live; that dwell upon the inhumanity inherent in present prevailing prison management while neglecting practical effort to reform.

"Vengeance is mine" is often quoted from our scriptures to justify punishment of the criminal, ignoring the words of St. Paul following, "But I will repay, saith the Lord." Again "To me belongeth vengeance" followed by "And recompense," and again, "For this is the time of the Lord's vengeance" (on Babylon) followed by "He will render unto her a recompense." And what is recompense? Webster says: "To return an equivalent for; to give compensation for; to pay for." And what is crime? Again appealing to our highest authority, Webster, crime is "Any violation of law, either divine or human; an omission of a duty commanded, or the commission of an act forbidden by law."

Eighty years ago, in my boyhood days, I was taught the doctrine of everlasting punishment in a future life; I did not believe in it then and do not believe it now. God will "compensate" the criminal inside and outside the prison walls by the ray of hope left in the breast of the most hardened criminal. Destroy that hope by man-made law, or by maladministration of law inside prison walls—you make a beast of the victim that will surely become an enemy of law and order should he ever regain his liberty—seek revenge for the spirit of revenge administered to him behind prison walls.

By the immutable laws of God, punishment for "compensation," for the benefit of the punished, for the betterment of the subject, is universal. This law applies to communities, states, nations, as well as to individuals. We may not understand this law any more than we understand the law of gravitation, but we know it exists.

England committed a crime against liberty and received punishment, and compensation followed; the new born nation committed a greater crime in protecting slavery, received an awful punishment, commensurate to the crime of the centuries and received its

compensation. The present generation can scarcely realize or believe the heinous crime of slavery.

Yes, this nation received its punishment, followed by compensation. This nation, this state, this community, where I write is receiving punishment for the continued violation of this righteous law of compensation as applied to our criminal class unfortunate enough to be placed behind prison bars and will continue without compensation until the great law is obeyed.

I can truly testify that during my residence of sixty-eight years in the territory now comprising the State of Washington, a marked advance has been made in the treatment of our criminals both inside and outside of prison walls; the criminals outside of prisons will be considered later; just now we will treat of the criminals confined in our prisons.

In the beginning, of course, there were no prisons and, in fact, we may almost say no need for them. This utopian condition, however, did not continue long; as soon as we had laws we had trespassers, criminals, if you will, bold enough to justify confinement. Accordingly, makeshift prisons were erected at the different county seats of a kind, the least said about them the better. Finally the necessity became so urgent a contract was made with a private company to build a penitentiary and for the keep and employment of the convicts. I visited that prison a number of times, knew each of the four members of the Company; knew them as law abiding, courteous, humane men, but must say their contact, or contract, may I not say, seemed to blunt their sensitive nature and conscience until I came to know it was fatal to good citizenship, or at least injurious. I then and there set my mind like flint against the contract system, injurious alike to convict, keeper and community.

An honest effort has been made in this state to correct the evils of the contract system and has made great progress under direct state control. The change,

however, missed the mark for the greater reform in that more attention was paid to financial results than to the improvement in the morals of convicts and consequent eventual safety of the community.

Any system to fulfill the moral obligation to the prisoners and secure safety to the public should provide employment for the criminal that would fit him to become a self-supporting citizen upon his release from imprisonment.

This, our present system, does not accomplish in that the provision for employment in the jute mill is of no benefit to the individual after his release, as it is entirely out of the line of industry in the community in which he is to live.

CHAPTER XL.

AVIATION

The author has taken several flights in the air and believes the future will develop the airplane as an active commercial competitor with the slower methods on the earth's surface; in lighter vein an account of his recent trips follows:

"How did it feel?" I have been asked by a number of friends since my return from a round trip to Victoria in the aeroplane with Edward Hubbard, who has the mail contract between Seattle and Victoria.

I remember I was asked that same question: "How did it feel?" when, seventy-two years ago, I took my first railroad ride out of Indianapolis over the track just completed from Madison, on the Ohio River, to Indianapolis. This was purely a "joy ride," to see "how it would feel," but proved to be not much joy though we got the ride. The track had recently been laid on two parallel wooden stringers, upon which iron strips, but little heavier than ordinary wagon tire, had been spiked, and had not yet been ballasted.

The "joy" all went out of us in less than a mile's travel, although the speed certainly did not exceed twelve miles an hour, and the "jolt" took possession. If there were any springs under the cars we certainly did not feel the effect of them. That was in 1848; I had nearly reached the age of eighteen and was ready for almost any kind of a venture, and didn't mind it; but my girl fairly scolded me for getting her into such a "scrape."

Wiseacres of that day shook their heads and said it was a "fad" that would soon wear itself out, and many refused to try the experiment of riding on the "new fangled machine."

A wag tells the story on the "Old Timers" of the Willamette Valley, who had left the Middle West before the advent of railroads there and many of them had reached the biblical age of three score years and ten before they had seen a railroad, and some of them had refused to ride on the "thing" and said they would "stay on land," as the saying goes, and said some of them had to be blindfolded and backed up on the train, as they did with their frightened mules to get them on the ferry boat.

But, pleasantry aside, in the early days as much distrust existed in the minds of the people as to the safety of railroads as exists now as to aeroplanes.

I will answer the question "how did it feel" by relating my first experience in the air before that of this trip to Victoria.

About a year ago I wanted to see the famous Paradise Valley above the timber line of Mount Rainier, to secure views for this work "Progress." We started from Lakeview, a few miles south of Tacoma, toward the mountain, with Mr. Barnes as pilot. We had reached an elevation of over a mile and about on a level with the valley, when the clouds shut off the view and the main purpose of the flight was defeated.

I will answer the question of "how did it feel" on that trip and then of the Victoria trip later.

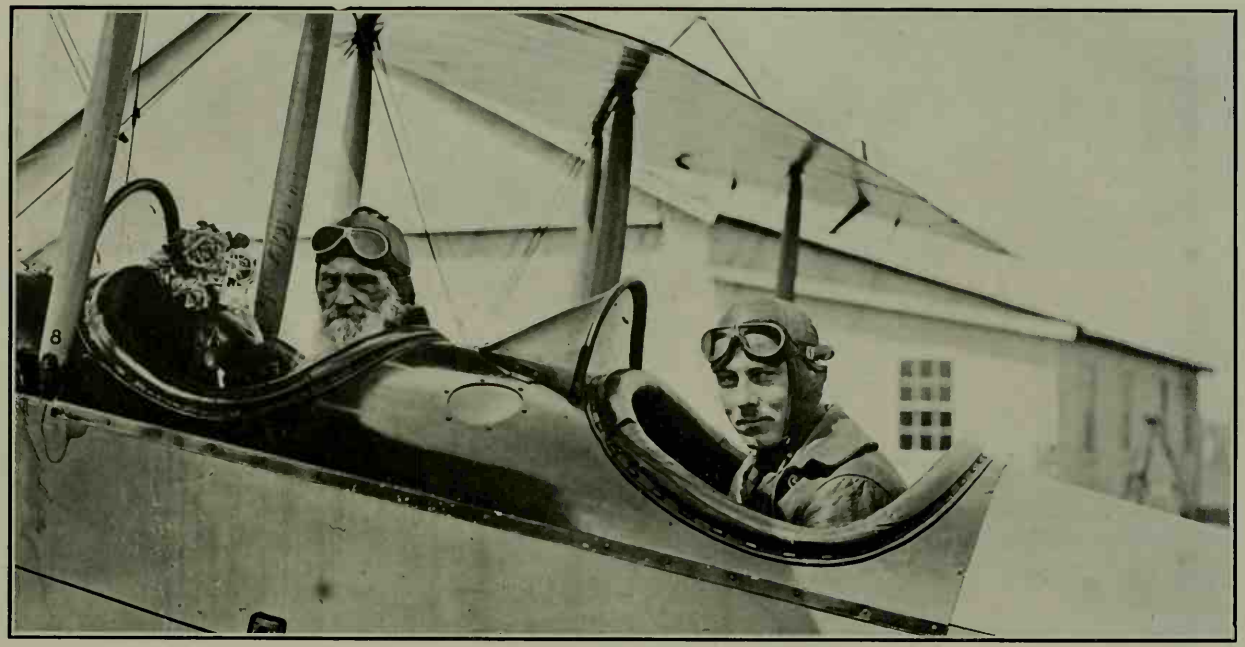
For the first half hour of the trip towards the mountain I forgot all about the novelty of the trip in trying to locate points with which I had been familiar since the year 1854, sixty-seven years ago, hunting cattle, lassoing calves, branding wild steers and like experiences of Western life. The first experience that awakened me to the fact that I was a long way above the solid ground I used to traverse, when, of a sudden, I felt a visible jar as though we had encountered something in the air and a feeling that the bottom had dropped out. This only for a moment. I felt that I

would rather be "on land" though only for a moment, as the pilot seemed undisturbed and the machine continued to run as though nothing had happened. Mr. Barnes, after we had landed, said we had run into a "hole in the air," meaning almost a vacuum; that he often encountered such at high altitudes, but did not consider them dangerous, although in one instance he descended rapidly at least 500 feet.

Going over to Victoria we encountered a strong head wind, though unsteady. Sometimes the little plane would rock fore and aft like a small boat crossing a wave of greater width than the length of the boat; at other times apparently the wind would shift and the little craft would careen slightly—roll, as we would say of a ship traveling in the trough of waves, but always promptly right itself to a level.

The rolling of an airship, however, is no more uncomfortable than the rolling of a ship at sea. I remember the first trip I made across the Atlantic we encountered a wave storm (there didn't seem to be much wind) when the ship rolled so heavily as to empty the tables of dishes and to send passengers first to one side of the cabin and then to the other, "all in a mess," as one of the English passengers said. The incident struck terror in the minds of the passengers, some shrieking, some praying while lying prostrate, with but few feeling confidence that the good ship would weather the storm. After the worst was over a sudden lurch of the ship caused a lady to leave her chair and irresistably cross the cabin and to sit down on the lap of a big, burly Irishman. The incident caused a burst of laughter that closed the prayer meetings, as the movement of the lady seemed deliberate, though entirely beyond her control, and in a measure restored cheerfulness.

Coming back from Victoria in the evening the air was calm and the trip more enjoyable, though I can say I enjoyed both. Going over, Mr. Hubbard flew low



LANDING AT SPOKANE AFTER A FLIGHT OF 90 MILES FROM LEWISTON, IDAHO

while following Admiralty Inlet to the Straits; sometimes apparently not more than a hundred feet above the water, from which view I could see and realize how rapidly we were traveling. Upon reaching the Straits he rose to a height of probably 500 feet, encountered considerable numbers of small air bumps and descended into the restricted and crowded harbor of Victoria to his landing incline, as the western phrase goes, "as easy as rolling off a log."

I first visited Victoria sixty-two years ago, going from Steilacoom in the old steamer Constitution at a speed of about eight miles an hour. She never got out of the harbor only as "junk," as the pilot failed to keep her off the rocks in the crooked narrow Victoria harbor channel, and when the tide fell, the steamer's back was broken and the "jig was up" for the old craft. Victoria at that time was a straggling village, but now is a city of fifty thousand people, with a grand capitol, splendid hotels and an active virile population.

The railroad supplanted the stage coach only after a real vigorous contest; the modern electric car has made serious inroads upon the parent system; the automobile and motor freight and passenger cars contend with both for public favor and each year more and more encroach upon the fixed track car traffic, and now comes the aeroplane to contend for mastery over all prior methods of travel and transportation.

The establishment of a daily aeroplane mail from New York to San Francisco; of long distance mail and passenger routes in Europe; of planes with 260 horse power carrying fifty passengers in a luxurious cabin; of 20,000 miles aggregate established daily mail routes; with 6,000 passengers annually crossing the English Channel from London to Paris, why should we hesitate to accept existing conditions.

We wonder if the time is not near at hand when the aeroplane will rise vertically from the house tops of cities or door yards of country dwellers; when the

power will be increased, the wings clipped and the gait speeded; when the people will trust the aeroplane as they do the jitney or the rail car.

We are already off the land in our own facts, so now may I not be pardoned to indulge in the pleasant pastime of "building castles in the air." When the individual may "flap his wings and crow" and be off towards the clouds or to see his best girl. Stranger things than this have happened in a life time.

One day last year I had engaged to meet the pioneers of Asotin County of our state in the public park of Clarkston on a Sunday afternoon. While speaking a monster aeroplane appeared over us, dropping messages of greeting, departing with a roar of the machinery power that enabled the aviator to maintain his position in the air.

Unwittingly I had agreed to meet with the Daughters of the Revolution on the following day at Spokane, ninety miles away, expecting to go by rail during the night, when I discovered the trains did not connect so I could keep both appointments.

My host, Mr. Miller, President of the Chamber of Commerce of Clarkston, said he believed the "flying machine," as he put it, would take me over in time and upon my request to ascertain, left the dinner table long enough to telephone over to headquarters and to receive the response: "Yes, we will be glad to take the old man over." And this is the story of how I came to fly from Clarkston to Spokane, ninety miles, at a gait of more than a mile a minute, after having crossed the continent with an ox team, poking along at two miles an hour. Some progress that.

Why, the newspapers made so much ado about it, sent an artist to meet us when we landed at Spokane, shown in the illustration, as if it was an adventure, I cannot say. I did not think of the trip in that light; in fact, had been in the air twice before in the

attempt to reach Paradise Valley of Mount Rainier, but in which we failed on account of the clouds.

I had never before seen the Steptoe battle ground until this time from the air as we passed over it on our way to Spokane. The old scout Fitzgerald has written a short account of the battle on the Butte bearing Steptoe's name, where the battle with the Indians occurred, and so I will not repeat it here.

The landscape view was grand and enchanting. Part of the way we were passing over the farming region of Washington; here we could see a large field of dark green of irregular dimensions; there another of a lighter shade; then again one of golden hue of either grain or the stubble; then again the fallow plowed fields of darker shade; and then here and there on some steep slope the native bunch grass showed of a distinct color of its own. The scene made me think of Grandmother's "crazy quilt" I used to admire so much, of numerous colors in the patch work, so numerous we thought all the colors were shown, but the landscape beat the treasured heirloom in varieties of color shades; it was an inspiring sight as we rapidly passed over the scene at a rate of more than a mile a minute.

We passed over or near six villages, each with two or more church spires and its school house and some with their town hall. The roads looked like a thread on the ground; the automobiles like a fly creeping along, so small in appearance that I would not have known what the black spot was had I not been prompted by my captain, the aviator.

THE AEROPLANE

From the remotest times men have scratched their heads and racked their brains to devise some way of making and arranging artificial wings attached to the body so that a person might navigate the air as a bird. This idea and this wish were not confined to

any particular race or clime; they seem to have had a spontaneous growth in every land of which we possess any historical knowledge.

In ancient Greece and Egypt there was a prevailing belief that certain persons had accomplished many journeys in that way; and not only persons but animals were at times believed to have flown through the air. Of course, these stories are myths, but they serve to show us that the idea of locomotion on wings appealed to the fancy of the people then as well as in modern times.

In the Middle Ages many learned men devoted their time and talents to solve this problem; but their efforts were fruitless. Natural philosophy and the laws of mechanics were not then sufficiently understood so as to successfully overcome the very serious obstacles that stood in the way of accomplishment. Among others that brilliant and versatile Italian genius, Leonardo da Vinci, a contemporary of Columbus; a painter, a sculptor, a civil and military engineer, inventor and man of letters, drew a very good plan of an aeroplane, but went no farther. And since his day much study and effort has been expended on this fascinating problem, by enthusiasts in many lands; all meeting with failure and many losing their lives in rash attempts.

In 1891, Otto Lelienthal made one or two flights of short duration in a plane of his own construction, but finally fell a victim to the imperfection of his machine. He is rightfully classed as the first aviator. S. Pilcher was the second. In order to get started both had to slide from an eminence; and both were killed.

About this time Wilbur and Orville Wright, of Dayton, Ohio, were interested deeply in the efforts of Lelienthal and Pilcher to accomplish air navigation; they also being desirous of achieving that distinction. But being practical men they realized that a machine to be of use for every day purposes, must be constructed in such a way as to be capable of rising from the

ground, whether it be level or hilly. Convenient hills are not to be found everywhere.

Shortly after this, one Samuel Pierpoint Langley, who was an enthusiast in the study of aeronautics, and devoted much time to experimenting in the construction of "flying machines," evolved a monoplane which he called an "aerodrome." He undoubtedly possessed a correct knowledge of the principles of air navigation and was so convinced in his own mind that he had mastered every essential detail necessary to success that he laid his plans before the Ordinance Dept. of the Government and received a very favorable recognition. Fifty thousand dollars was appropriated for making a thorough investigation of his invention. After spending considerable time in the construction of his aerodrome, he prepared to launch it. In October, 1903, he attempted a launching on the banks of the Potomac, but failed in the attempt through some defect in appliances. Again in December, 1903, he essayed a second attempt and the machine becoming entangled in defective launching apparatus toppled into the Potomac. Then the newspapers raised such a cry of derision and sarcasm that the Government abandoned the project.

Not long after this Prof. Langley died.

In the meantime Wright Brothers worked assiduously to perfect their invention, aided not a little by the failures of their contemporaries, whose mistakes they avoided. They mastered the equilibrium and other problems; added a motor, gas engine and propeller in 1903; and will go down in history as the men who overcame all the obstacles to successful aerial navigation, in heavier than air machines.

Their accomplishments in this line elicited the plaudits and admiration of people in every land.

They then offered to sell their invention to the U. S. War Dept., but not being quite able to meet all the exacting requirements of the commission appointed for

the purpose, the offer was turned down. It was then offered to the French Government and after awhile was accepted.

When Wright Brothers made 35 miles an hour in their exhibition flights the world was amazed. Now 35 miles an hour would be a snail's pace.

Everyone knows the vast strides that have been made in aeronautics in the past few years, so it would be useless here to try to give a detailed account of the progress made. The "world war" certainly stimulated improvements in this line, for it has become a most important branch in the conduct of modern warfare. An army lacking in this important feature, no matter how superior in other respects, would almost certainly be doomed to defeat.

And should the world be again cursed by a trial of strength of two or more nations with huge armies clashing in the shock of battle, the side best equipped in aerial craft is almost sure to come out victorious.

But let us turn from the uses of aviation as an engine of past or future wars, and see how it is steadily assuming an important part in the commercial life of the country, and in fact of the world.

In Europe even more so than in the U. S. the utility of aerial mail and passenger routes between important governmental and commercial centers was discerned so that now regular trips are made on schedule time between such points as Paris to Brussels, Milan to Rome, London to Paris, Paris to Warsaw, etc.

France certainly leads all other lands in providing for the comfort and safety of those who journey by aeroplane. This superiority is largely due to the liberality of the French Government in granting bounties for the encouragement of the new industry until it becomes self sustaining.

The routes from Paris to London and Brussels are equipped with Pullman, Limousine and Taxy coaches,

furnished elegantly, according to the number of passengers wishing to make the trip; the Pullman carrying twelve, the Limousine eight and the Taxy four. The fare is very moderate, the Government standing for upwards of three-fourths of the cost of operation.

From Paris to Brussels the time made by the air route is less than one-third of that made by rail.

The risk is far less than by either railroad or steamer and that fact will certainly result in the increase of patronage. Speed and security are good drawing cards; and time will gradually eliminate the natural timidity of people to flying through space.

Several new air routes are about to be established in every European country, and coaches are being built of much larger capacity than those now in use. The Germans are alive to the advantages of aviation; so are the Italians, with the great Capproni as the directing spirit. Even Spain has awakened to its importance, and a Spanish inventor has perfected a device for discarding the slide in starting, so that the machine can rise direct from where it stands. If the roof of your house is flat you can use it for a starting and landing point; certainly a wonderful improvement.

But the United States, it is to be hoped, will not long lag behind. In this, as in other lines of progress, it is not too much to expect that our country will soon forge to the front.

In many parts of the country there are large aviation fields where hundreds and thousands of young men are being trained as aviators.

Let no one infer from what has been said in this chapter that anything approaching perfection has been reached in aviation.

The possibilities of progress along this line are enough to stagger human incredulity. In fifty years or less may not railroads and steamers be replaced almost entirely by the safer and far swifter flying machine. Who can tell?

CHAPTER XLI.

ALASKA

The Purchase An Event Of National Importance—Immense Territory For Mere Trifle—Limitless Resources—Seward Purchased Better Than He Knew—Wonderful Possibilities In The Future—A Game Country Without Rival—Fish And Fur Great Industries—Everything Great And Grand In Alaska —Has Accelerated The Growth Of Washington.

The purchase of Alaska was an event of great national importance and to Washington a momentous incident.

While Washington contained but 69,127 square miles, Alaska boundaries included 590,884, an area eight times as large, and the State of Indiana thrown in for good measure; or in other words, fourteen times the size of the great state of Ohio, or still other words, twice the size of the original thirteen colonies with 81,382 miles to spare.

At the time, few grasped the importance of the acquisition to the territory (of Washington) and in fact, none could fully, as the wonderful resources were yet locked in the silence of past ages; hence when William H. Seward, as Secretary of State, on the 30th day of March, 1867, negotiated a treaty for the purchase of Alaska from the Russian Government for $7,200,000, many citizens thought it was a foolish move, fraught with danger, and for a long period of time the transaction was dubbed "Seward's Folly". To most people, the purchase seemed a mystery. Why did Russia want to sell? Why should the United States buy? The Czar of Russia, it is generally believed, like Napoleon, who half a century before, sold what we know as the

Louisiana Purchase, desired to sell Alaska because he felt there would be danger of losing these possessions in the event of war; but this did not justify, in the minds of the opponents of the treaty, the purchase by the United States.

Curiously enough, for a long period before (and all years subsequent until the disintegration of the Russian Government) there seemed to be the closest friendship between the two governments, Russia, the most despotic, the United States, the freest of any on earth.

During the war of the rebellion, when our enemy the Aristocracy of England, were intriguing to aid the South, there appeared a Russian squadron in New York harbor, which was interpreted on both sides of the Atlantic to mean "Hands off" and left a lasting impression of friendship in the minds of the people of the United States.

There were other reasons that prompted our Government to act. In the far off territory of Washington, then struggling along with but a small population, there were men of far seeing vision who believed the fisheries of the adjacent seas would warrant the acquisition, and appealed to the Government at Washington, Report of the Committee on Foreign Affairs, 40th Congress, 2nd Session, "aided by the representations of the Washington territorial legislature, the attention of the government was drawn to the subject, and a treaty negotiated for the purchase of Russian America by the United States."

The climate of Alaska along the Coast line is mild. The seasons are short, the area suitable for agriculture comparatively small, hence we may not look to Alaska as an agricultural future state. The extensive tundras of Alaska furnish a vast natural feeding ground for the reindeer, estimated by experts sufficient in extent to perpetually support ten million or more reindeer, which warrants the belief that eventually large

supplies of meat will be drawn from that source for consumption in other portions of the nation. The small herd introduced by the Government in 1892 has rapidly and regularly increased and now numbers over a hundred thousand head. The rapid increase the last two decades, if maintained will easily pass the million mark in another decade.

Scenery of Alaska

Tourists never return from a trip to Alaska without showing by their countenances the enthusiasm within their breasts, a satisfaction following the greatest sights of Nature, the loftiest mountain, the largest active glacier, the largest and most active of existing volcanoes, one of the most violent of history according to recent exploration. Now comes the discovery of the "Ten thousand smokes" one of the "seven wonders of the world." To match these gigantic manifestations of power and make them accessible, nearly two thousand square miles as a national park has been set apart for the sight-seeing people and preservation of this wonder of wonders.

Lying at anchor a mile off the face of the Muir glacier, one can hear the roar of the falling ice into the bay and feel the swash of resultant waves visibly roll the ship as in an ordinary disturbed sea.

No more than 30,000 people inhabited this vast region when acquired by the United States, a portion of whom were evidently of the Mongolian race.

I can well remember when the Oregon country was called the "derelict" of Nations and unfit for habitation of man. Now, over four million prosperous inhabitants make their homes within its original borders, and so it will be within the memory of the child now born with this great northland, Alaska. The people will seek homes in the mild climate of the seaboard, now virtually a solitude, but no more so than the Oregon country when I first began to clear a farm that yielded

such extraordinary results as to make one shy of telling the facts, lest he may be accused of exaggeration—bragging.

The resources of the Alaskan territory are yet but slightly developed; the climate as we have seen, is varied and mild over a large area along the coast line and no doubt exists in the minds of observers that eventually a large population will settle and build homes within its border. The wealth of the territory has contributed and is yet contributing to the prosperity of Washington, as a great preponderance of the trade centers in the Puget Sound district.

Since the purchase, by official report we learn the aggregate commerce has been $1,404,881,394. The mineral product, principally gold and copper $437,465.930. Fish, principally salmon, halibut and cod $413,749,222. Fur, $84,704,428 with miscellaneous to bring the whole aggregate to $937,704,424.

Under the frozen earth of the interior are found deep down, a hundred feet beneath the surface, the mammoth bones of ancient extinct species, or imbedded in a glacier, ride on its slow passage to the sea. A land of contrarieties to puzzle the brain of man for centuries.

Alaska is the hunter's paradise for large game. Since the disappearance of the buffalo, there is nothing equals the great ranges of moose, caribou, mountain sheep, goat, deer, with thirteen varieties of bear, including the monster grizzly and polar.

The caribou, the most widely distributed and most numerous, and like the buffalo of the Plains, migratory, have left their deep worn trails and still traverse them in vast numbers.

A dispatch from British Columbia, received as I write, under the headlines "Deer steak, via Airplane," vividly illustrates scenes that are duplicated in numerous places of Alaska.

"Northern Canada is swarming with countless herds of caribou, and musk ox. These Canadian herds are rapidly increasing in number. It is nothing unusual for one herd to require ten days in continuous procession day and night to pass a given point, and the noise of this great parade vies with Niagara in volume."

The suggestive heading "Deer steak by airplane" may some day bear fruit in utilizing the vast wild herds roaming the inaccessible regions of Alaska; in any event, reveals the possibilities of the hunter's paradise—an adventure to fairly stagger the imagination.

I am tempted to quote from my *"Busy Life"* of experience on the Plains in the year 1852 where literally millions of buffalo roamed, to illustrate what I doubt not is duplicated in the vast unexplored regions of Alaska:

"Well up the Platte but below Fort Laramie, we had the experience of a night stampede that struck terror to the very vitals of man and beast. It so happened that evening we had brought our cattle into camp, a thing we did not usually do. We had driven the wagons into a circle with the tongue of one wagon chained to the hind axle tree of the one in front, with the cattle inside the circle and the tents outside. I slept in the wagon that night which was not often, for usually I would be out on the range with the oxen, and if I slept at all, snugged up close to Dandy's back. My partner, William Buck, was in the tent nearby and sleeping on the ground, likewise Brother Oliver.

"We first heard the approaching storm, and almost instantly every animal in the corral was on his feet. Just then the alarm was given and all hands turned out, not yet knowing what caused the general commotion. A roar like an approaching storm could be heard in the distance. We can liken it to the roar of a heavy railroad train on a still night passing at no great distance. As by instinct all suddenly seemed to know what was approaching, the tents were emptied of their

inmates, the weak parts of the corral guarded, the frightened cattle looked after, and everyone in the camp alert to watch what was coming.

"In the darkness of the night we could soon see the form of the foremost leader and then such dense masses that one could not distinguish one from the other. How long they were passing, we forgot to note; it seemed like an age. When daylight came a few stragglers were yet to be seen and fell under the unerring aim of the frontierman's rifle. Our neighbors in camp did not escape loss. Some were detained for days gathering up their scattered stock, while again others were unable to find them, and never did recover them."

Of the smaller game of Alaska, the fox and beaver are the most numerous and most valuable. A member of the Geological Survey party in 1916 under the caption of "A game country without rival in America" reporting the presence of beaver, "Night after night we would hear the sharp splash of the swimming animals as they whacked their tails upon the surface of the stream. Beaver are protected by law until 1920, and under this protection have greatly increased in numbers. In the lowlands they have so much obstructed all the smaller streams with their dams that foot travel overland is impossible until ice forms." * * *

"We saw a good many foxes and found two dens around which young ones were playing." Again, "In the pass between Taklat and Stony Rivers the two pack trains and eight men stood in the midst of a vast herd of caribou, scattered for miles in all directions." From the same observer, I quote, "The mountains at the head of the Taklat and Telanike rivers literally swarm with the magnificent white big horn sheep." * * * * I have counted over 300 in a single day's journey of ten miles.

These sights, under the very shadow of Mt. McKinley, rearing its head 20,000 feet above sea level, the highest of any on the continent, with its proximity to

the greatest volcanic eruption of history, are unique and beyond the power of description.

Mount Kamar, where "it is evident that the present mountain is merely a stub of a much greater peak of former days," * * * where "ash was thrown 900 miles away, great quantities of fine dust were thrown into the higher regions of the atmosphere and quickly distributed over the whole world," inspires a feeling of indescribable awe of the wonders of this truly wonderland. And then, as if this was not enough we read "I can never forget my sensation at the sight which met my eyes, (The Ten Thousand Smokes) as I surmounted the valley; for there, stretching as far as the eye could reach, till the valley turned behind a blue mountain in the distance were hundreds, aye thousands, of little volcanoes like those we had just examined. Many of them were sending up columns of steam which rose a thousand feet before dissolving" (our Yellowstone a pigmy in comparison). (See foot note.)

There is nothing small about Alaska; surely its future must be great. Lying to the north and west of the first island of the Aleutian Chain and three thousand miles west of the mainland in latitude 55°, longitude 170°, a little speck shows on the map, discovered in 1788, by Gerassium Pribiloff (a Russian navigator), and now bearing his name that has become famous the world over by its once great seal herd that annually came to its rocky shore. It reads like a legend though doubtless is true history, that when discovered the seal herd numbered over four million and finally under mismanagement of our government and pelagic sealing had dwindled to less than 150,000, but which, by recent intelligent management, has in the last eight years, been increased to over half a million herd.

Foot Note:—*The National Geographical* magazine, Aug. 1912, Feb. 1913, Jan. 1917, Feb. 1918.

Notwithstanding the gross mismanagement with consequent depletion of the herd and subsequent increase, the value of the skins taken has yielded to our government since the purchase, the princely sum of $55,370,700, not including 1920.

The seal rookeries, now that pelagic sealing is prohibited, are destined to yield a great revenue (many millions a year), which under the present management is annually increasing. Verily, the simple facts read like a fairy story.

Fox farming has proven profitable and already six islands have been leased for that industry.

There are seven varieties listed, of value for each pelt from $24.00 to $166.00.

During the year 1917, 18,339 pelts were shipped of a total value of $588,938.

There are five specimens of bear listed, viz: Black, Brown, Glacier, Grizzly and Polar. 1,288 pelts were shipped during the year 1917 of the agregate value of $21,739. The lynx contributed 21,210 pelts, valued at $296,940, the mink, 18,832, $75,328. Muskrat 72,264, $32,518, during the year 1917, beside the seal was $1,064,399.55. Seal skins valued at $274,200, making a grand total for furs for 1917 of $1,338,599.55.

Of this Northland so closely associated in interests commercially, socially and future destiny with Washington, I am sometimes tempted to treat them as one. The development of one aids the other and go hand in hand. The cities of Puget Sound all participate in the benefits incident to the development of Alaska. Our citizens have large interests in the great territory and vice versa, the citizens of Alaska look upon Washington as their home State which they frequent for recreation, for investment often of surplus gains and for supplies incident to a civilized life.

Without Alaska Washington would not now have attained the commanding development that is her pride; without Alaska, the future of this State would be far less bright than now lies in store for her; with Alaska pouring her treasures of resources into the lap of Washington, the State is destined to become the most populous of any of the Union in proportion to its area, its cities destined to grow, agriculture to flourish under the stimulus of a home market and its commerce, to expand to the commanding position second to none.

CHAPTER XLII.

Incidents on the Oregon Trail

Progress in speed and comfort of present modes of travel over that of seventy years ago is well known by all observant readers, hence I need spend but scant time on that topic. "Seeing is believing", the old adage tells us, but let me add that experience is knowing and without such first knowledge one cannot gain the vivid impression that follows in the wake of actual participation in the change, leastwise I did not, until after crossing over the Oregon trail with the ox team at a gait of two miles an hour for a thousand hours and afterwards substantially over the same route at forty miles an hour, and finally to cap the climax, near a hundred miles in the airplane at a speed of more than a mile a minute.

The track of the Oregon trail remains in solitude where travel has been diverted to easier grades or past centers of population, yet the reminder of the far-reaching results is still vividly in mind; without that wonderful thoroughfare, the longest of any in recorded history, the great throng of American home builders bound for the Oregon country would have been delayed at the critical time when the ownership of that country hung in the balance between the United States and Great Britain.

It is not my design, however, here to discuss the mooted question of who "saved Oregon." In my "Busy Life", still in print, a full history of the Oregon Trail is given, together with a detailed account of the three trips with the ox-team over the whole length of the trail between the Missouri River and the Puget Sound Basin, one of them extended to the Atlantic and to Washington City.

In all these writings, pressed for space, the high points were not touched. To cover everyday incidents of small account of drives aggregating near eight thousand miles in a volume of a few hundred pages was impossible, so now, I propose in this story, shall I call it,—camp-fire tales—no matter what we call it, take you into the innermost experiences of life on the Plains. I have not done this before, as I have said, for want of space and further, because it could not be done otherwise than by a very personal story from which as a younger man I shrank. Well now, that I have garnered years, *that* feeling has left me; what of it even if some party did criticize; would that hurt me? Not at all now.

I will not undertake to cover many miles in these familiar stories or to "clean up" as we go and with the promise the stories shall be true but will not confine myself to either particular trip or to any particular place—rather a hop-skip scatterment as the spirit may move me.

When fitting up for the second trip (1906) to go out on the trail to mark it with stone monuments, nearly all of my friends refused to aid in any shape or manner but did their utmost to persuade me not to undertake the trip and not content at that, to persuade others as a friendly act not to encourage the outfitting in any way. A favorite daughter said if I went out on the trail with an old yoke of oxen the people would laugh at me and I did not feel sure but they would. But what if they did? Was that any reason why I should not undertake the mission, I and my life partner, the wife, had cherished for forty years.

The first obstacle to be met was to get a yoke of oxen; oxen had gone into discard and none could be found within a circle of a hundred miles; then the ox-driver; none anywhere to be heard of. I didn't mind that so much, as I knew I could drive them myself if I had to; then the wagon. That had to be built, a real

old fashioned "Prairie Schooner", wooden axle, with linch pins and the tar bucket and many other little things to represent the real old Plains trip of sixty years before.

The remains of three old wagons that had crossed the plains more than half a century before were secured and a wagon built nearly all out of new selected material; the work so well done that after a twenty-two months' drive the repair bill had been only fifty cents, when, at the end of the journey I drove on to the White House grounds in Washington City.

But I am getting ahead of my story. At last a yoke of oxen was found, but one of them entirely unsuitable for the trip. I had to buy both to get the one which I named Twist. I took Twist down to the stock yards at Tacoma and left him there until some expected heavy steers should arrive, a band of five-year olds off the ranges of Montana. I had the pick of sixty and chose one because I liked the look of the eye, the build, and furthermore appeared to be the heaviest of the lot. The first move was to get a rope on him which the stock yard men speedily did and turned the remainder out of the corral, but when it came to getting a yoke on him, the men were shy, as the fight with the steer began at once. But by perseverance the yoke was put on him, the Twist ox led up to take the other end of it and the rope unfastened. Then the "circus" began; the infuriated steer would lunge forward and in that way turn Twist around and around, sometimes jumping stiff-legged, snorting, bellowing and I wouldn't say what else he didn't do. I told the men to open the gate. They said he would get away from me. "Open the gate," I said, perhaps a little sternly, and they opened it, and in a few minutes I lost sight of them but knew I could track them, leastwise had tracked many an ox on the plains in 1852. Once on the road to Puyallup, eight miles distant, bordered all the way with heavy timber and thick underbrush, a veritable lane, I felt quite safe but did feel that perhaps I had caught a tartar,

but was relieved when I securely roped him in my stable at Puyallup and the yoke off.

Both oxen were quite well fagged out and I confess that I felt a little the worse for wear and half wondered to myself whether I really was making a foolish move; whoever is reading this story must remember I lacked but a few days of being seventy-six years old.

Hunger is a great pacifier, with animals as well as with men. Next morning I went to the stable and offered him some hay out of my hand but he shook his head, threatened me—showed fight and I left him. I mean this same steer that had given us so much trouble the day before. I then named him Dave. He became famous as the largest trained ox I could hear of anywhere in the United States but that is about all that could be said in his favor for I never could trust either his heels or his horns. He gained 860 pounds in the eight years I had him under the yoke and had driven him over 8,000 miles; he measured sixteen hand and one inch high and never was lame on the whole trip.

On the third day Dave ate some hay out of my hand, licked up some chop feed with a relish and began to relent. After a few days of drill with the wagon on the roads near Puyallup the start was made on the trip to become known as the Oregon Trail Monument Expedition, with final result of one hundred and sixty granite monuments and markers. Thirty of these were under my supervision and the remainder by the States of Idaho, Wyoming and Nebraska, all within a period of five years from the date of planting the first one at Tenino, Washington.

I will now skip three hundred miles to The Dalles, Oregon, a city of 5,000 inhabitants, to a new date, March 9th. We are nearing the City at nightfall, having shipped from Portland through the Columbia river gap on the river steamer, Bailey Gatzert.

In accordance with previous arrangements, Goebel left for home and so, with Twist and Dave and the dog

Jim, we were left sole occupants of the camp with the high-sounding name of the "Oregon Trail Monument Expedition."

The mention of "Jim", the dog referred to, reminds me I have not given him his place in the story as he was in at the beginning. Jim was a character; like Mardon, to be mentioned later, he would fight at the drop of a hat, though neither of them quarrelsome.

I first saw Jim in my neighbor James' garden driving his neighbor's chickens out of the berry patch. He did not rush in and scatter the flock but carefully edged up and followed as his game gave way. It was so deftly done I asked Mr. James if he had trained him but he said not. "That the dog had just 'took up the trick'." I at once put at James to let me have him to go on my trip but he said he would have to get his boy's consent; finally a present of $5.00 fixed things all right and Jim became an important member of the expedition and remained with me for six years and to within a few days of the final end of the second trip. Jim and I became fast friends; not so with Jim and Dave. Dave hooked at Jim the very first chance he got, made a lunge at him and snorted as though he would eat him up alive if he had a chance and the two then and there became deadly enemies and never relented to the last. Jim, I have often said, came to understand English better than many men I met on the trip. He was a young dog, just in his 'teens, as we would speak of a young sprig of a boy, but very receptive. He soon learned many phrases spoken without especial emphasis and was very willing to mind. I have seen him sit on his haunches and turn his head first one way and then the other as much as to say, "I did not quite catch what you said." He was intense in his likes and dislikes. Mardon once suddenly gathered on him and threw him off a bridge into the river below. I am sure that after a thousand miles travel, Jim did not forget nor forgive the insult. Finally when he got run over by a truck near Kansas city,

lost some of his teeth and for a while not able to swallow, only either milk or thin porridge, and Mardon cared tenderly for him, Jim relented and he and Mardon became fast friends.

Well, as I was saying, Goebel had left; the smoke filled the tent, the fire wouldn't burn, only by fits and spells according as the wind shifted; snow had fallen and covered the ground; the oxen were unprotected from the storm and all in all, I didn't feel very cheerful.

At this juncture next morning someone from the outside pushed the flap of the tent aside, peeked in and said, "I heard you wanted help." "Come in," I answered. Scanning the stranger the thought passed through my mind that this was not the kind of help I wanted. "Can you drive oxen?" "No, but I can learn; I have camped a good deal." "Then you ought to know how to cook." "Try me." I was in a mood to try almost anything for I hadn't had any breakfast and but a "pick up" supper the night before. Sure enough he did know how to cook and it was not long before I sniffed the fumes of coffee while attending to the oxen outside the tent and soon forgot the smoke, the depression of spirit or thought of failure.

I was camped on historic ground. Pulpit Rock on which Jason Lee used to climb and preach to the Indians, reared its head fifteen feet high, renowned as a landmark to register the daring deeds of the early missionaries. The monument to be unveiled and decorated stood nearby. I did not need much preparation for the dedication speech, for I was "full of it" and wanted to say more than I had time to speak. All things combined to make a cheerful time and everybody went away feeling better for having participated in perpetuating the memory of the pioneers and marking the track they had trodden.

A ludicrous incident had occurred of which at the time I was ignorant. The ladies, hearing about my mission and that I was coming, put their heads together,

suitably inscribed a granite slab, put it in place and awaited the arrival of the ox-team. Some wag seeing it, sedately asked, "Who's dead?" The next day the slab disappeared and a suitable monument soon took its place.

Fourteen days have passed and we have reached Pendleton, Oregon, 138½ miles out from The Dalles—nearly ten miles a day; pretty slow traveling you say. Wait a minute and see if it was worth while. "Yes, we want a monument," and in a couple of hours the money to pay for it provided and the stone cutters set to work.

On the third day the schools were out in marching order; some of the stores closed; all hands moved toward the spot where the monument stood, a mile distant; some on horseback, some in buggies; more on foot; enough to crowd the sidewalks, the children marching in the street behind the ox-team; I knew then what I was not certain of before I left home, that the daughter's prophecy would not come true; that the people would not laugh at me for going out on the road with an "old yoke of oxen."

If this scene described did lighten my drooping spirits, it did not lift the question of doubt as the Blue Mountains lay straight ahead of me and everybody said I couldn't get over them so early in the season. Here is where I stripped for the real fight. I simply said I couldn't know unless I tried, and I meant to try.

Someone, somehow, had got hold of an incident that had occurred in Portland where the trustees of the Unitarian Church had refused me the church in which to lecture because they would do nothing to "encourage" that old man (a brother in the Church) to go out on the Plains "to die." I had heard this whispered before I left Portland but how on earth the story had out-traveled me, I did not know. I did not mean to go out on the Plains to die. I simply didn't share in their fear. I knew, or thought I knew, that if I really got stalled,

I could take the back track and travel out of danger and so I lightened up the load over the mountains by shipping everything I could spare by the railroad and prepared for the battle, if it came to a battle. And so, when the little monument was snugly in place, the songs of the school children ended and the sedate business men returned to their counters, without further ado, I struck the road for the Indian reservation six miles distant and to the point where the mountain climb began.

In less than a mile's travel, a terrible rain and wind storm was encountered and continued until the reservation was reached and later. To say there was a dry thread of clothing on my back would hardly express it; if I had worn boots like I did in 1852, I am sure they would have been full of water, for I had experienced just such a storm in the Platte Valley and did catch both boots full of water.

Lo, and behold, the agent was not at home when we arrived at the reservation and nobody seemed to have authority to tell us where to go or what to do so I drove to the lee side of an outbuilding, took possession of an open shed for the oxen, helped myself to feed for them and knockd at the door of the mess house where I was made welcome at the table. After spending a pleasant evening with the employees of the agency and drying my clothes while on me, and the agent not appearing, I clambered into the wagon without light or heat, curled down with my clothes on and slept soundly until morning.

When morning came, some cars from off the mountain run passed with a heavy top load of snow. Word was passed that two feet of snow had fallen in the mountains within the last twenty-four hours. Now this was a "pretty kettle of fish" as the western phrase would express it. I well remembered the drive over these mountains in 1852; the scattering pine trees, the absence of undergrowth; the hard surface and absence of sunken roads to guide one. Well, to say the least,

it was a "stumper" and set me to thinking. It didn't take me long to conclude. I would go out and spy out the land. The agent had returned. "Move into that house," he said, "help yourself to wood and feed for the oxen and just make yourself at home." I willingly obeyed his order. That night I boarded a train for a station near the summit and just past midnight arrived at Meachem where I had been told I could find a hotel. The train passed on immediately and left me on the platform; not a light or sign of habitation to be seen anywhere. After wandering around a little while, I finally found an open door and a bed and as usual slept soundly until late in the morning.

At this point the wagon road reached and crossed the railroad. Off to the east a few hundred yards a little mountain rivulet crossed the road in a small opening to mark the spot known far and wide as "Lee's Encampment." The popular mind associated the name of that of Robert E. Lee, the confederate commander, but we pioneers knew different.

The location of the "Encampment" had become a legend in the popular mind and in fact, we cannot say there is a record of an encampment at this point. We know that on the first day of September, 1834, Lee and his four companions reached the foot of the Blue Mountains on his way to Walla Walla (now Wallula) on the Columbia River.

No other point east or west of this grassy opening and convenient water for many miles on the trail is found so suitable for camping hence we feel assured this is the identical spot upon which the weary party encamped and rested.

Jason Lee was the first missionary to cross the continent. He preceded Marcus Whitman by two years. The Methodist conference sent him to convert the Indians and save their souls from everlasting torment by embracing the Christian religion. This remark may bring a protest from some readers as irreverent and

untrue; it is neither. As a lad in my 'teens in "Old Indiana" I often listened to the fervent prayers and sermons of Methodist preachers describing a lake of burning fire provided by God to torment the souls of unbelievers. Well, the Methodist people who believed this doctrine were justified in making strenuous efforts to save souls from this dire calamity and whatever may be said of the belief we can but admire the intrepid soldiers of the cross that were willing to give up everything, even life itself, for the cause.

Lee was one of them; Whitman was another and there were many more such, ready for the sacrifice before it became manifest that their efforts to convert the Indians were doomed to fail: as Rev. Parker, coworker with Whitman put it, when he told them old testament stories, they were pleased but when he told them of the "Great Truth" (meaning the doctrine of eternal damnation) they would not listen (and I don't blame them).

The missionaries, however, did a great work for the nation, for their own kith and kin. They opened the way and planted the seed that brought floods of home-builders to the Oregon country. All hail to the intrepid Missionaries, although they builded different than they knew; they also builded better than they or their generation knew.

I said to myself, here is a place for a monument, but how to get one did not at the moment appear.

Twenty inches of snow had fallen but was settling fast, sufficient to say that two days' tug of war with the help of a mountaineer's team for a few miles, landed the outfit in sight of Lee's Encampment, but with one night encampment on the snow and with but once stalled in a snow bank.

We will now skip about fifty miles to camp No. 34, at a farmhouse. At this camp, April 12, the Twist ox kicked me and almost disabled my right knee, a

very serious mishap and depriving me of the full use of it for a month; the pain was so excruciating, I lost my sight for the moment and consented to be taken into the farmhouse nearby. The good lady soon brought out some linament and bandages and proved to be a veritable good samaritan. This was the only accident that befell me on the whole twenty-two month trip across the continent and to Washington City.

"Now what shall I do?" said Mardon, when the leg was dressed and comfortably resting on a chair while I ate a breakfast the "Good Samaritan" had provided before I knew what she was doing. I can never know, but will always believe the good lady derived as great pleasure in providing for me as I did in receiving her kindly acts. God bless the ladies and this one in particular for I needed something to cheer me up. I did fear my knee was permanently injured, even if no bones were broken and that I would have to accept the kind offer of a friend who would not help me to outfit the trip but when ready for the start said, "If you get in a hobble out on the plains and need help, just telegraph me and I will respond." I knew that was the feeling of more than one of my friends at home, as expressed to me when ready to go and on the point of leaving.

"What shall we do with all this stuff?" Mardon asked when we had been in camp at Baker City for a couple of days. "That's not stuff," I answered, "that's good-will;" and it is more, we are not going to starve, whatever else may happen. The camp in the heart of the city; the novelty of the old-time wagon; the slick, clean oxen (curried and brushed twice a day); the intelligent, attractive dog, Jim; the white-haired old man, limping around with cane in hand, scarcely able to walk, did certainly draw the crowds and with them, an enthusiasm for the work in hand. The ladies, not forgetful of the inner man had "dumped", I had liked to have said but that is not the word, presented, is a better

way of expressing it, of the very fat of the land, accompanied with dainties.

Aside from the great value from a historical point of view of this and similar letters written "on the spot", while incidents are vividly in mind, this particular one reviews old-time memories and emotions that cannot be described adequately to convey the intense feelings aroused. When fifty-six years after the events narrated in his letter we first met in Colonel Allen's elegant home in Pittsburg, Penn., the cordial welcome mingled with tears and mirth leaves a memory too precious to disclose, it must be experienced to be appreciated.

Let us skip in date to September 12, 1852. Location, the right bank of Snake River, just below the mouth of Boise River and near the old Hudson's Bay Fort Boise; scene, a throng of tired, discouraged immigrants pressing forward toward the Oregon country, many sick, some dying on the spot, all fleeing from threatening famine. At this junction, myself and brother Oliver, appeared on the scene. We had shouldered our blankets and a small supply of food and pressed forward afoot, leaving our teams to slowly advance. Here we met and joined hands with Edward J. Allen, who, after his arrival, became so prominent in the affairs of the new territory (of Washington) and later Colonel of a Pennsylvania regiment during the war of the rebellion. The following letter, written on the spot, came into my possession more than sixty years after it was written.

Excerpts from Col. Edward Jay Allen's "Over the Oregon Trail," a Series of letters written to his family in Pittsburgh, Penn., from his journey across the continent by ox-team in 1852.

(From Lewis River, Idaho, Sept. 12, 1852)

"* * * While considering these things we found that there was only one little flat here to carry all the thronging immigration at this last crossing of the

Snake River; the immigrants were subjected to great delay and extortionate prices. These conditions led to the formation of the 'Pennsylvania Ferry Company'. We thought we could do well for ourselves and make reasonable prices for the immigrants. We had all the men necessary and we needed all we had; the river was running silently but with great swiftness. Such sweeps as we would have could not avail against such a current, but only propel us across, quartering to gain some assistance from this stream, we had to start well above our point of crossing and, sweeping over, would land nearly half a mile below on the other side, and after crossing we would cordelle half a mile up on that side to repeat the performance. We lashed two of our wagon-beds more securely together and decking them over so as to run the wagons on without peril.

We set to work immediately constructing our landings (it seemed odd there was no corporation taxing us for the privilege) and settled the location of our lodge—emphatically "in some vast wilderness." This wickeyup, made of willows in the style of architecture prevalent hereabouts, was tolerably comfortable and remarkably well ventilated.

We were now ready for business and crossed a train that afternoon, the immigrants bearing a hand in the cordelling. One of the members of that company, thinking ferrying a good business, fitted up his wagon-bed and started in as ferryman, so that there was a quicker transit and less delay."

"We were kept tolerably busy at our ferry. Our neighbors had the best boats but we did matters up more reasonably and honorably and got the best part of the ferrying; it seemed a good opportunity in this primitive country to restore the original method of trade wherein both parties should profit by the operation—that we should offer a good service cheaper and better than they could do it for themselves and receive a reasonable compensation for it without taking advant-

age of their necessities, and that they should make a reasonable and just acceptance of the fact that service was to be measured here more generously than at home. We went on this basis, which was probably the more easily adjusted because it was not a matter of consultation with the others, it rested entirely with us who had the whip hand. There is no government so satisfactory as an absolute monarchy if the autocrat has justice and judgment, but he must be saturated with both, and forgetful of self. I think we decided fairly and there was no complaint.

As for the many who were unable to pay and were crossed regardless thereof, that is another story.

* * * Swept down by the current in crossing the river, we had to land some distance below our starting point and therefore had to cordelle quite a distance up the beach to a higher point on that side to make allowance for the drift."

"When the trains came up we had a good deal of competition, some keen Yankees stopping behind to imitate our ferrying; after one or two trips resulting in swamped boats, and a brief try of the cordelling operation, they girded up their loins and departed thence."

"We saw a great deal of distress and much of sorrow and bereavement in our avocation, and trust me when I state that "The Pennsylvania Ferry Company", collectively and individually, in no wise reflected discredit on the fair reputation of the State for fair dealing, nor did violence to their own feelings as men and fellow-creatures in their dealings with the poor and distressed. If a man had money we ferried him over, and if he hadn't we ferried as cheerfully as though we were paid for our labor, and bidding him Godspeed, sent him on his journey with good wishes. I wish to remark in passing that we expected every able-bodied man, money or no money, to take a generous hand in the cordelling business. If there was any lingering sus-

picion that our charges were too high, a brief spell at that dispiriting performance brought a new point of view. Provisions we had none to spare, as money would not buy them, and my heart ached many a time as we ferried the poor moneyless families and toil-worn immigrants and, looking at their stocks, saw how scanty they were and thought how far they would have to go before they could renew them.

We ferried over many such, penniless and disheartened widows without number, whose husbands had died on the route, for it seemed the suffering was greater at the rear of the immigration, with many, very many sick. I never before saw so much suffering nor so many cases of individual hardship.

One woman died in crossing and in this case our indignation was aroused for the poor creature had died of sheer neglect. She should never have traveled in her condition; her company should at all risks and hazards have lain by. She lay dead, or dying unwitnessed by anyone, and when I looked in the wagon after we landed she was so covered by the dust of the road she had come through as to be scarcely recognizable. A strong man would have died under such conditions, much more certainly the weak, delicate woman she seemed to be. There was a good deal of excited feeling about it and some of our men hunted up the husband, a robust man, and took him to where lay the mother of his children; but he showed so much real feeling and distress and was so overwhelmed by the stroke that they thought if he had been wanting in attention and thought for her he would have a future of remorse, and so let him go. I think he would never know how near he came to closing his journey at Fort Boise.

The mournful wagon with the dead mother and three orphan children rolled on. It was estimated that five thousand people died on the plains that year. The general hardships and dangers of the Trail were supplemented by the cholera in its most virulent form."

"All the boys of my original party had left except Kountz, who had concluded to wait longer, finding opportunity to send his wife on the train. Two of our partners in the earlier organization, two brothers by the name of Meeker, had opportunity to sell out their interest for $185.00 and had also gone. So we had two new associations in our ferry, one of whom, named McClure, was a fine old fellow whom I liked much."

CHAPTER XLIII.

The Indians

I approach writing this chapter on Indians and Indian affairs and progress with reluctance, or shall I say with hesitation—almost, as one might say, with diffidence, not because my views have changed since writing a partial history of the Indian wars within the borders of the territory, now State of Washington, nearly twenty years ago, but because I am loath to revive the animosities that accompanied that recital. That history covered only Western Washington and is accessible to the reader in numerous libraries throughout the State and it is not my design to repeat the incidents of that war, or for that matter, any of the wars to be considered in the extended scope to be reviewed, but rather to note the advance—progress, shall I not say, in the treatment of the Indian question by our Government and the progress of the Indians themselves.

When the territory was created, the estimate of fifteen thousand Indians, I believe, was under the actual number within the borders of the territory. We know by actual enumeration there were less than four thousand American citizens and less than nine hundred male adults. George Gibbs, after a painstaking review, estimated the number of Indians west of the Cascade Mountains at that time at 8,000.

No treaties with the Indians had been made. According to the fiction of dual governments within the borders of the United States, of treating Indians as independent nations—rightful owners of the soil, we pioneers were here as interlopers, as marauders assuming ownership without shadow of title; without compensation to the owners, or even so much as asking "By your leave." It was this fiction, promulgated from the beginning of the life of the nation and continued for nearly a century

that brought such indescribable calamities without number upon hapless peoples, both Indians and whites.

The defects of the system, or more accurately speaking, lack of system—fiction—is told in the quotations that follow from "The Tragedy of Leschi", my own work of fifteen years ago in writing of the Indian war of Western Washington.

"The Government had adopted, first, possibly from necessity and afterwards from force of precedent, the fiction of Indian Nationalities, of independent governing powers within the territory of the United States, as unsound in principle as it was unjust and fatal to both races. It required the experience of a century to bring about the final overthrow of the treaty theory of dealing with the Indians; of dealing with them as organized and independent communities; of treating with them in one breath as tribes and in the next as dependents (which they were); of ackowledging their ownership of the soil on the one hand while grasping it firmly with the other; of making professions of peace, when under prevailing conditions there could be no peace and finally professing the desire to have them adopt the habits of civilized life while driving them into conditions to make such a life impossible. This writing is not intended as a wholesale denunciation of our government for its dealings with the Indian race. A goverment that has expended over five hundred million dollars on its civil list in an attempt to better the condition of less than three hundred thousand is not a goverment to condemn without stint. The conditions confronting the government were abnormal and of necessity in a way experimental. Grave blunders were made—blunders, not of the heart, but from a supposed necessity to keep peace, yet none the less fatal to the welfare of the frontiersman as to the native race. This fatal policy has now all been changed by a four line proviso in a thirty page appropriation bill, approved March 3rd, 1871, as follows: "Provided, that hereafter no Indian nation or tribe within the territory of the United States shall be acknowledged or recognized as an

independent nation, tribe, or power with whom the United States may contract by treaty.

"Had this proviso been the law of the land twenty years before, there would have been no Indian war west of the Cascade Mountains. I speak with great confidence from the fact that where treaties were not made, as with the Chehalis band or tribe, and others, no war ensued. It is true, a large majority of the Indians who entered into treaty stipulations remained friendly, and that not necessarily because a treaty is made that war must ensue, but this does not alter the fact that the making of the Medicine Creek and Point Elliot treaties was the sole cause of the war that followed, that caused the horrible massacre mentioned, that drove the pioneers from their homes, the Indians into either hiding, the war camp, or the worse and more demoralizing, dependent pauper-making camps to be fed by the government."

Since the passage of this provision (March 3, 1871) no more treaties with Indians have been made. This great progressive step has borne fruit although much time elapsed, as in all great reforms, before a full measure of benefit could be experienced. There were existent treaties that must be observed; trust funds in the hands of the government to administer; the fiction that the child born to parents that had themselves been born within the boundaries of the United States was not entitled to citizenship still remained. The aftermath of treaties and fiction of dual citizenship remained and Indian wars continued, notably that of the great chief Joseph.

It is unprofitable to dwell on the shortcomings or the sins of omission and commission of our ancestors unless we can point to a better way.

Speaking for myself, I believe a child born in the United States whether white, black, or Indian should be considered a citizen and subject in all respect to our laws; that there should be a national compulsory educational law and funds provided to carry the law into effect; that the Indian child should be compelled to receive

an English common school education and be accorded the right to become a voter at the age of maturity the same as any other native born American—in a word, treat the Indians as individual American citizens with all the rights and responsibilities incidental to citizenship and not as a foregn element, or a dependent in our midst.

It fell to my lot to live within five miles of the treaty ground when the first treaty, the "Medicine Creek" treaty was made. Representatives of nine tribes, or bands, appointed by the governor, with several hundred Indians were assembled. Nine hundred Indians were either present or supposed to be represented by the petty chiefs appointed. The treaty provided for the relinquishment of title to approximately 800 square miles. The reserve allotted to the Indians was six square miles, all fir timber land—hill land, entirely unsuitable for cultivation, habitation, or grazing.

The congregated bands represented peoples of different habits, different tongues, different affiliations, but nothing in common. None of them could read or write his name and but few, if any, could understand the English language; and but few understood what the proceedings meant except that they were to receive some present. Leschi understood what it meant and refused to make his mark opposite his name, (that had been written in the document) to signify his consent and left the treaty ground in a rage.

One case will suffice to illustrate the effect upon the Indians. Leschi (pronounced Lesh-ki), a Nisqually Indian, possessed a farm, had fields fenced, plowed ground, grain seeded; 50 or more horses. He had, it is true, but a possessory right to his land. By the treaty he was dispossessed of this right. He was denied the right to own land; he was an outcast, dispossessed of this property. He refused to sign the treaty and finally was goaded to go to war within ten months after the treaty was made; eventually defeated in the field, sacrificed on the scaffold while his tribe came into possession of an enlarged reservation he had contended for from the beginning.

CHIEF LESCHI

It is a pathetic story: Leschi was a great man; humane, liberal and just in his dealings, and trustworthy. I came to know almost every member of his tribe in my hop fields in later years and many, if not all, of his kin folks. They all had the same story to tell, besides the testimony of many pioneers. Leschi forbade his people making war on non-combatants and after he got control, succeeded in carrying out his policy. We have another illustration of like kind in the case of Chief Joseph; but that is another story in a different field, and will be told by Mr. FitzGerald, the old scout with General Howard, but who is now a citizen of Seattle.

I have had long experience with Indians, for twenty years or more employing them in my hop fields. For a number of years I think there were at least a thousand of them each year. We never had any serious trouble with them. Pardon me, readers, for speaking frankly of my own action. I am simply writing history that can yet be abundantly verified. I do not claim special credit for my actions, for I treated the Indians under the same rule I did the white employees, that is, I never undertook to deceive them; strove to deal justly with them and exacted the same line of conduct from them, and must say that, with but few, very few exceptions, I had no complaint to make. Our farm tools and loose property on the premises were not placed under lock and key, yet were not molested. I will not say that a high moral sense of honor and honesty prevailed in the Indian character. I am simply relating a fact. Our Indian orphan boy, long with us, we trusted implicitly. He never betrayed the trust yet when admitting he had stolen some shirts from other Indian boys, and reminded he had never stolen from me, came back without guile: "You never stole from me." In other words, the golden rule was reversed.

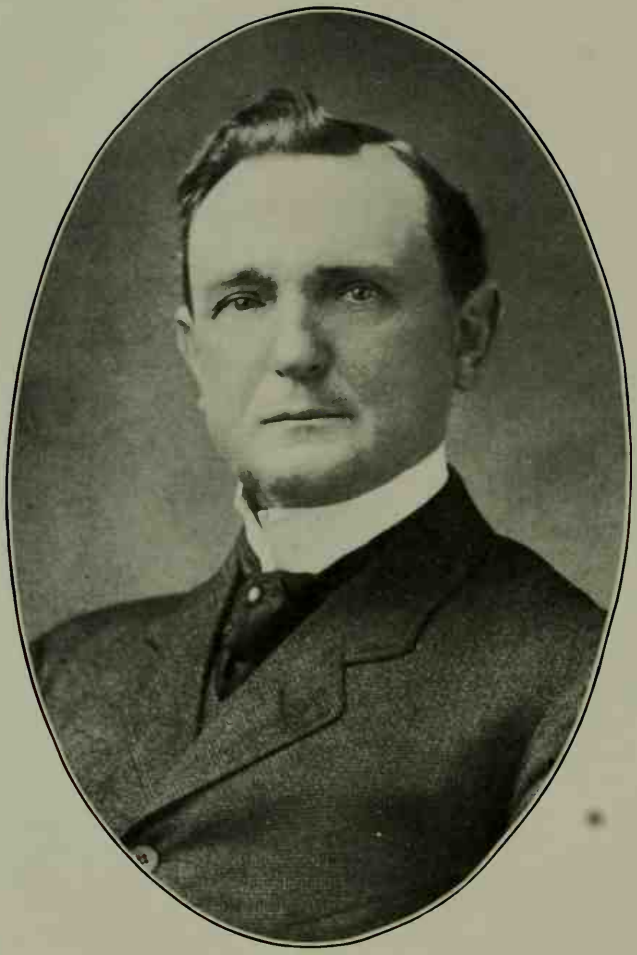
This to an extent, illustrates the Indian character. If you deal fair and square with him and gain his confidence, he will reciprocate and deal fair and square with you: If you attempt to deceive him, he justifies

himself to deceive you if he can; if you inflict an injury upon him or any of his relatives, he will retaliate and become your implacable enemy and repay in kind with accumulated interest.

Annuities doled out to tribes by our government have been the cause of demoralizing, not only the Indian, but many of our own race as well, is now in a measure discontinued. You can never make good citizens of indolent shirking dependents. The admonition of that great preacher and teacher, St. Paul, in his letter to the Thessalonians: "And if any would not work, neither should he eat," laid down a golden rule that our government has, in former years observed in the breach. We can now record another progressive step in dealing with the Indians in discontinuance of this practice.

Under the Medicine Creek treaty, the Puyallup tribe of Indians were allotted two sections (1280 acres) of high table land, now the heart of the city of Tacoma, but entirely unsuited to their wants and inadequate in extent; the Nisqually were similarly treated, or even worse.

The Indians were defeated in the field while at the same time the government was defeated in the effort to enforce the terms of the treaty. At the close of the conflict the Indians were allotted the lands they contended for at the beginning. The local authorities contended the Indians were not warriors, but simply murderers, and acting under that fiction, actually hung the chief, Leschi, for acts alleged to have been committed against military parties in the field after armies on both sides were arrayed, leaving an indelible stain upon the memory of the chief actors of the territorial authorities.



MAURICE FITZGERALD

Modoc War Veteran and Scout With General O. O. Howard

CHAPTER XLIV.

Indian Wars

The following chapter on the Indian wars within and near the borders of Washington, truthfully relates history and vividly illustrates the progress of the period under review.

We no longer have a right to hang prisoners without judge or jury or an organized force to shoot down men, women and children in fishing camps and on retreat, or a policy to huddle the Indians on restricted areas, as provided in the Medicine Creek treaty.

The Indians are now treated as individuals having the right of citizenship if they choose to accept the responsibility.

In no department of our government has there been a greater progress than that in the treatment of the Indian.

The author of this chapter, Mr. FitzGerald, former scout with General Howard, a participant in the Modoc War, now a resident of Seattle, is a man of large experience and a close observer, has given us an unbiased story of the events related.—E. M.

Haller's Retreat—1855

The years 1855-56 are memorable in the Pacific Northwest for what appeared to be a combined effort on the part of the aboriginal tribes to stem the tide of white immigration to the Oregon country. Nothing like a systematic, concentrated, and united movement for a common purpose could be expected from wild and nomadic peoples, each tribe speaking a different language or dialect, unintelligible to its neighbor; and who had, in the not remote past, been frequently engaged in predatory warfare with each other. Yet

the word seems to have been passed around from tribe to tribe that unless the influx of the palefaces was halted the Indians would lose their hunting grounds and be killed off or made slaves.

About that time this idea was beginning to be confirmed in the minds of the aborigines from the Rocky Mountains to the Coast. Nor can it be said that it was an unreasonable fear.

The first white men that came into their country had been either fur hunters, or members of exploration parties, both lacking in anything that looked like an intention to make this territory a permanent home. Their presence was a novelty for the red man, as well as a source from which firearms, powder and trinkets of all kinds were to be had in trade. Then came the missionaries who were really interesting; who indulged only in matters that concerned the spirit and who manifested no disposition to acquire any of the Indians' lands.

The Indians could tolerate these strangers and had nothing to fear from their presence.

But gradually there began to come in the wake of the missionaries, in ever increasing numbers, long trains of wagons drawn by oxen and horses, filled with women and children, supplied with the implements of husbandry and everything necessary for making permanent settlement.

These newcomers were taking possession of some of the choicest hunting grounds of the natives and in many instances acting in a high-handed and arbitrary manner towards the latter. This thing had now been going on for ten or twelve years and no signs of letting up. This naturally put the Indians to thinking how to end this intolerable condition. They could see no way of succeeding except to fight; consequently, there were many conflicts all over the Pacific Coast in those years; in Oregon and Washington, especially, the Indians made strenuous efforts to gain the mastery; but

of course their efforts proved futile and only rendered their condition worse than it had been.

In this territory the Indians were on the warpath both east and west of the Cascade range of mountains in these years.

The campaign on the West side will be found fully described in another chapter; this narrative has relation only to an incident of the campaign against the Yakima tribe on the Eastern side of the mountains.

In the spring of 1855 some gold prospects were discovered near Colville which caused quite an influx of miners to rush to the scene of the excitement. This so annoyed the Indians that Pierie Jerome, Chief of the "Kettle Falls" band, about August 1st of that year, declared that no American would be allowed to pass through his country. About the same time, A. J. Bolon, Special Agent for the Yakima Indians, was cruelly murdered by some of that tribe at the instigation of Chief Kamiakim; at least, some Yakima Indian women so informed a Warm Spring Indian sent from the Dalles to learn the truth of the unfortunate occurrence. Some said that Qualchin, son of Owhi, a half brother of Kamiakim, was the perpetrator of the dastardly deed; others charged it against a different Indian. However, Bolon was murdered while returning to the Dalles, accompanied by two or three Indians. The guilty ones also slew his horse, then made a fire and endeavored to consume the bodies of both man and horse.

When the facts of the murder were learned at the Dalles it was determined to send a punitive expedition into the land of the Yakimas to demand that the guilty ones should be delivered into the hands of the military authorities for punishment commensurate with the offense.

At this time Major Granville O. Haller, commanding Fort Dalles, had just returned from Idaho, where he had been during the summer for the purpose of pun-

ishing Indians who had waylaid and murdered a company of emigrants known as the "Ward Party", the preceding season. He arrived in advance of his command.

He now received orders to proceed to the Yakima country to punish Bolon's murderers and compel the Indians to comply with the provisions of the treaty recently made and entered into between them and the representatives of the United States. In this undertaking he was to cooperate with a force to be sent from Steilacoom across the Cascade Range by way of "Natches Pass."

Major Haller assembled 107 officers and men, a pack train, one month's provisions and a mountain howitzer, for the purpose, and set out from the Dalles October third. The course taken was a little east of north. For two days the little command passed over the rolling bunchgrass plateau now embraced in Klickitat county without encountering any Indian sign. But the third day having passed over the Simcoe Mountains and while descending one of the tributaries of the Simcoe River, when about to cross the stream which at this point was fringed with a heavy growth of brush and willows, the command was suddenly fired upon from the dense growth of brush; at the same time the savages started to whoop and yell in a most blood-curdling fashion. Major Haller quickly moved his men to a more advantageous position on an elevation free from brush.

While most of the Indians were hidden from view in the willows and brush, from which bullets and arrows came whizzing at intervals, though generally falling short of the mark, a solitary Indian now appeared on the summit of a bare hill, shouting at the top of his voice and waving his arms in a most fantastic manner, evidently directing the movements of the red men in the thickets. He undoubtedly was the directing head of the savages.

This desultory engagement lasted till nightfall when the Indians withdrew. Haller lost three killed and

five wounded in this preliminary skirmish. The Indian loss was much greater.

The next morning the Indians appeared in greater force than the day before and renewed the fight. Haller moved his command to a still higher position which afforded greater advantages for defense. Here the Indians kept up a persistent attack, by small parties, all day long, never bringing their whole force into action at once. Towards evening the Indians became more aggressive, maneuvering with the evident intention of trying to surround the troops. Several times the soldiers charged with the bayonet from which the Indians fled precipitately. They had no taste for contact with cold steel.

By evening the troops were nearly exhausted from the continuous two days' fighting without water and but little food. They were outnumbered five or six to one and the outlook was certainly desperate. At this juncture Major Haller, finding an opportunity to get a messenger through the imperfect encircling line of the savages, sent a request to the Dalles for immediate reinforcements.

At dusk, as usual, the Indians withdrew when Major Haller determined, if possible, to extricate his force from the very dangerous predicament in which it was placed. He had the animals that could be spared turned loose, destroyed a large amount of baggage and provisions, made the wounded as comfortable as possible, and after spiking the howitzer, quietly moved out of camp without the enemy having any idea of his intention. The command was divided into two detachments; Major Haller commanding the main body while Capt. Russell had charge of the rear guard. In the darkness of the night the rear guard missed the course followed by the main body; so after traveling a few hours Haller encamped and had some fires started to show the rear guard where he was. Russell's men did not see the fires, but the Indians did. Before daylight the camp was attacked by the savages and a general engagement

again begun. The troops, though tired and outnumbered fought gallantly, repelling every attack of the red men who, seeing their efforts were unavailing, finally withdrew.

Haller continued his retreat, bands of hostiles hovering on his flanks but making no serious attacks. When within 25 miles of the Dalles, Lieut. Day of the 3rd Artillery was met with a reinforcement of 45 men. The Indians now disappeared.

Major Haller's losses were five killed and seventeen wounded, besides the loss of the howitzer, baggage and supplies.

Capt. Russell, with the rear guard, arrived safely at the Dalles, having followed a different trail upon which no Indians were encountered.

It was understood that when Major Haller's command would start from Fort Dalles for the Yakima country to punish the murderers of Special Indian Agent Bolon, another force would be sent from Fort Steilacoom on the "Sound" to meet him on the east side of the Cascade range and co-operate with him in bringing to justice the refractory Yakimas. In accordance with this understanding Capt. Maloney, in charge at Fort Steilacoom, sent Lieut. Slaughter, with 48 men, to perform that duty.

He left Ft. Steilacoom on the 5th of October and, going by White River and Connell's Prairie over the Natches Pass, he penetrated the Yakima country some little distance. Then learning of Haller's defeat and retreat to the Dalles he decided that the only thing for him to do, with the small force under him, was to get out of there as quickly as possible and return to the Sound. He recrossed the mountains and camped on White River, where the Indians were acting in a threatening manner, springing from their dissatisfaction with the terms of the treaty recently negotiated with them by Governor Stevens.

In consequence of the defeat of Major Haller and the seriousness of the situation on the east side of the mountains, Capt. Maloney, in command at Ft. Steila-

coom, requested acting Governor Mason to issue a call for two companies of Volunteers. The call was made; one Company to be raised at Olympia, the other at Vancouver.

On October 22nd, a call for four additional companies was made to protect the lives and property of the citizens from Indian attack.

By this time Capt. Maloney had sent Co. "B" to join Slaughter's force on White River and in a day or two receiving additional volunteer reinforcements, on the 24th of October, having assumed personal command of the forces, now amounting to 240 men, he set out from White River for the country of the hostile Yakimas, reaching the summit by the Natches Pass on the 28th. It was his intention to co-operate with the force Major Rains had been assembling at Fort Dalles for chastising the Indians that had attacked and defeated Major Haller. Having entered the Yakima country on the 30th, he received information by courier from Fort Steilacoom that Major Rains was not yet ready to move, nor would he be for some days; and realizing the insufficiency of his force to withstand an attack of the combined Indians, should they find he was in their territory, he determined to retrace his steps and return to the West side.

He also learned that the effect of his expedition to fight the Yakimas had been to greatly excite the Sound Indians, who were old-time allies and otherwise closely related to the Yakimas and this, coupled with their other grievances, inflamed them with the war spirit.

He sent a dispatch to Fort Steilacoom, notifying the officer in command at that place of his intentions. This dispatch was carried by one Wm. Tidd, accompanied on the journey by six other members of Maloney's command.

They encountered the Indian encampment on Connell's Prairie and after passing that point, were ambushed and two of their number slain. This was four days after Connell and McAllister had been killed at the same place.

These Indians were evidently preparing to attack Maloney's command from the rear.

Upon the news of Haller's defeat becoming generally known, public sentiment was aroused and a demand for a force sufficiently strong to overcome all Indian opposition, to be sent forthwith into the country of the hostile Yakimas, was made upon the U. S. military authorities and the executives of Oregon and Washington.

Accordingly a force of almost 700 men consisting of 350 regulars under Major Rains and an equal number of Oregon and Washington Volunteers under Col. J. W. Nesmith was collected at the Dalles, and on October 30th set out for the Indian country. As invariably happens where volunteers and regulars are jointly engaged in warlike operations, there is lack of harmony and cohesion. Jealousies and rivalries impair the actions and interfere with the efficiency of the troops. So it was in this movement against Kamiakin and his people. Little was accomplished. The Indians kept out of the way; only two or three slight skirmishes taking place during the entire journey. Lieut. Phil Sheridan in command of a small number of dragoons, participated in this expedition and actually did the greater part of the little fighting that was done. In two or more charges with the twenty dragoons he put to flight the Yakima enemy just as he afterwards did the Confederates at Winchester and elsewhere.

When the expedition returned to the Dalles everyone seemed dissatisfied at the results achieved. Major Rains specially came in for severe criticism for his dilatoriness and lack of initiative. The criticism was not confined to volunteer sources; subordinate regular officers were chagrined and humiliated at the mistakes and blunders of the commander and expressed themselves freely as to his incompetency.

The following year the trouble with the Yakimas was ended although Kamiakin was never captured. After taking part with the Spokanes and Palouses in

their conflicts with Steptoe and Wright, he finally entered British Columbia, where he remained permanently to escape punishment for his misdeeds.

Battle of Tohotonimme, 1858 and Defeat of Steptoe

Indian troubles in the extreme northwestern portion of the United States now embraced in the State of Washington, though at times fraught with violence and atrocities, were happily not of long duration. At the breaking out of the Civil War, practically all difficulties between the whites and the natives had been adjusted to the apparent, if not real, satisfaction of both.

But prior to 1860, for many years there was general unrest and irritation among the numerous Indian tribes inhabiting that region; at intervals breaking out in sanguinary conflicts.

In this chapter, it is intended to give a brief narration of one of those outbursts of belligerency on the part of a few tribes that then dwelt in what is now generally known as the "Palouse" country.

In the early part of 1858, the Palouses, Spokanes and Coeur d'Alenes became very bellicose in their attitude towards white men. This was especially true of the Palouse tribe, which seemed to resent even the harmless passage of travelers through its territory. The Spokanes and Coeur d'Alenes, who had heretofore been uniformly friendly towards the Americans, now seemed inclined to take sides with the Palouses in opposing the white man's aggression. This change of conduct has been attributed to the activities of Mormon emissaries sent among the Indians to arouse a spirit of revolt against the Government of the United States. The report was circulated that the U. S. was going to take forcible possession of all the lands of the Indians and bring in white men to settle upon them and the Indians would have no where to hunt or fish.

At this time there was almost open war between the followers of Brigham Young and the United States Government and as was natural to expect the resentment felt by the Mormons, at what they considered the oppressive action of the government, was very strong, and in retaliation they sought to arouse a warlike feeling among the Indians against the United States. This was never very hard to do.

During the height of the excitement the Spokanes or Palouses murdered two white men who were on their way to Colville to the mines. And at Colville there was serious trouble brewing between the Indians and some forty miners who had assembled there to prospect.

At this time Lieut. Col. E. J. Steptoe was commanding officer of Fort Walla Walla. The Fort had been established a little more than a year before by Col. Steptoe under orders of Col. Clarke then commanding the Dept. of the Pacific with Hdqrs. at San Francisco, as a suitable point to concentrate troops in the event of trouble with the numerous Indian tribes having their habitat in that region.

Col. Steptoe now notified Col. Clarke of the prevailing unrest among the northern tribes and the reported murder of the two white men, and suggested that with the approval of his superior, he might organize a force of two or three companies and go into the country of the disaffected Indians and interview the chiefs of those tribes and explain to them the falsity of the rumors attributed to the Mormon emissaries; and that the United States government had no intention of doing anything to impair the friendly relations heretofore existing between it and the Indians. He also suggested that before returning he would proceed to Colville and endeavor to settle amicably the differences existing between the miners and the Colville Indians.

Col. Clarke gave his approval to the plan suggested and preparations were accordingly made to carry it into effect.

It was necessary to wait until the grass was sufficiently advanced to afford ample feed for the horses of the troopers and the pack animals. This was usually the case about the first of May.

The expedition consisted of three troops of dragoons and twenty-five mounted infantry and a few friendly Nez Perces as guides and scouts. Two howitzers were also taken along to provide against eventualities. The troops were not well armed; a large number having only muskets which were a very inferior weapon and were only effective at very close range. Through some oversight, the supply of ammunition taken along was inadequate for such a purpose; the entire supply only amounting to forty rounds per man. This mistake, as will afterwards appear, came very near being the undoing of the whole party. The full strength of the expeditionary party did not exceed 160 men. After leaving Walla Walla, the route taken was slightly east of north. At that season of the year when that whole region was still a virgin land undefiled by spade or plow, it presented a charming appearance. The undulating hills, covered with a carpet of the greenest grass, interspersed with myriads of beautiful and fragrant wild flowers; and between the rolling hills, every little while, the traveler came upon a beautiful stream winding its way through some little valley or rapidly rushing through a steep gorge or canyon as if eager to be swallowed up in the mighty current of the winding Snake or the majestic Columbia.

These streams were usually fringed with a growth of willows, with here and there a grove of delicate quaking asp, or more pretentious cottonwood, affording delightful camping places for the weary traveler.

When the writer first visited that attractive region nearly half a century ago, it was then very little changed from what it was when Col. Steptoe and his small command made that memorable march through it in 1858.

True in the early seventies there were scattered settlements in many places, but yet there were also immense stretches without a vestige of habitation just as they had been for ages. Now that whole country is occupied and in cultivation and a more fruitful soil it would be hard to find upon the continent.

The little command wended its way leisurely for many days, everyone enjoying the refreshing journey and the usually restful and attractive camping grounds.

When the place for crossing Snake River was reached, luckily a number of friendly Nez Perces were found encamped there, whose assistance in crossing that swollen and rapid torrent of almost half a mile in width was indispensable. These Indians being expert swimmers and knowing how to handle the horses in water, maneuvered among the animals in the current with the greatest dexterity and succeeded in getting all across without a mishap.

Up to this time, no unfriendly Indians had been encountered, nor were any seen for two or three days after the troops had crossed the Snake at "Wolf's Landing."

Then an occasional glimpse would be had of small parties of the red men on distant hill points, evidently watching the movements of the troops. Nothing important transpired for a few days, until having crossed the Palouse River the command made camp on what is known as Pine Creek, not far from the Spokane River. The following forenoon, while leisurely marching ahead, large bodies of Indians suddenly appeared coming from the hills in every direction. They were well mounted and armed and evidently prepared for hostilities. Their number was estimated at somewhere near a thousand braves.

When this formidable array of warlike savages came within a hundred yards of the command Steptoe halted, and through his interpreters asked the chiefs what they wanted. The Spokane chiefs said that they had been told that he had come into their country to

kill them off and take possession of their country. Col. Steptoe told them that they had listened to false reports, that he had come among them with no hostile intent, but wished to keep alive and foster the friendly feeling that had heretofore existed between their tribe and the Americans; that he was on the way to Colville to try and settle amicably some dispute or difficulty between white men and Indians there. These explanatory remarks didn't satisfy the Indians; they seemed bent on mischief and informed the Colonel that they wouldn't permit him to cross the Spokane River. The Colonel thought that this was simply a bluff on the part of the Indians; however, he told his officers that he believed there was no way to avoid a conflict and that they must be prepared to fight.

He determined, therefore, not to change his plans as yet; in the meantime refraining from in any way giving cause to the Indians to think that he had any sinister purpose in coming into their country, but was there simply on a mission of goodwill and conciliation.

Steptoe and his command kept going right ahead and every man prepared to do his duty if a conflict must come. The Indians riding along close by jeering at the soldiers and calling them women and other insulting names, but committing no overt acts as yet.

When evening came, Colonel Steptoe made camp, placing his men in the best possible position should an attack be made. The Indians hung around till dark and then disappeared. The night passed quietly. That evening, Steptoe realizing the seriousness of the situation, called one of the Nez Perce guides and asked him if he could take a message to Walla Walla as quickly as possible; the Indian said he would. The message related the dangerous turn events had taken and requested that every available man be sent to meet him at the Snake River crossing. The Nez Perce started out on that long and hazardous journey through the enemy's country. It was hardly thought possible that

he could succeed in reaching Snake River without being run down by the enemy. Next morning the Indians again appeared in greater numbers than on the previous day, acting more threateningly than ever, though still refraining from attacking the column. There were at least 800 of them, all in their war paint and with better rifles than the troopers. Every one knew that the Indians were determined on having a fight, but seemed to want the soldiers to take the initiative.

The trail leading to Colville led into a deep ravine or canyon which, if followed, would place the column at a great disadvantage and, in fact, invite annihilation. Colonel Steptoe held a consultation with his officers, and in view of the menacing attitude of the Indians, they unanimously agreed that the only thing to do was to retrace their steps and endeavor to reach the south side of the Snake River.

The little column was disposed in the best possible order for repelling the attacks of the redmen and the march to the south begun.

As soon as the Indians saw the change made by Colonel Steptoe, they galloped from all directions, passing close to the column, hooting and jeering at the soldiers, who had to use uncommon self control in withholding their fire. The situation remained unchanged for an hour or two, the hostiles hoping to get the column separated sufficiently so that they might rush in and cut off a part of the men. Not being afforded that kind of an opportunity, they at length made an attack on the rear of the column which soon became a general engagement. The soldiers displayed admirable coolness, wasting no ammunition, but making every shot count. The Indians galloped round the column lying along the sides of their horses and firing over the neck; pursuing similar tactics to the Sioux in later years when Custer and his gallant band were annihilated on the Little Big Horn.

Colonel Steptoe now brought his howitzers into action, which, though doing little damage, still kept the

Indians at a respectful distance for some little time. They soon overcame the fear inspired by the big guns and attacked the column spiritedly on all sides. The fighting was desperate. Several hand to hand combats taking place between soldiers and Indians, the former occasionally even clubbing with their guns and smashing the heads of the Indians with the butts. The discipline of the soldiers was the only hope of withstanding the fierce onslaught of the savages.

A great many Indians had already bitten the dust from the steady and well directed fire of the soldiers, who kept steadily retreating, Colonel Steptoe wishing to gain the summit of a hill situated not a great distance to the south and east, where it would be possible to make a more effective resistance. Quite a number of the little band had already fallen and the outlook seemed very gloomy indeed.

After gaining the eminence in question, the troops were arranged in a sort of circular formation, the pack train and supplies in the center. The men by this time were suffering for water and attempts were made to reach a small creek close to the base of the hill, to gain a supply of the precious fluid; but every attempt was foiled by the vigilant savages. It was now about sundown and the Indians were still attacking with redoubled fury, trying to accomplish the destruction of the white men before darkness set in. About this time, Captain Taylor fell, mortally wounded. He was a splendid officer and had been a tower of strength to the beleaguered troops. His loss was keenly felt at this very critical juncture. Lieut. Wm. Gaston had been killed a little earlier in the fiercest of the fight. At dusk the Indians were called off and Colonel Steptoe had then an opportunity to estimate his losses and determine how long he would be able to continue the unequal contest successfully; for he was satisfied the cessation of the fighting would not last long. He found that many men and horses had been killed or wounded; but worst of all, the ammunition was almost exhausted, there being only an average

of three rounds per man left. It would be impossible to continue fighting much longer, and when the ammunition was gone, all must fall into the hands of the bloodthirsty redskins and perish miserably. Colonel Steptoe seems to have made his mind up to await the next attack and die fighting to the last. What else could he do? The wounded were given every possible attention and the dead buried on the hillside. The outlook seemed hopeless. During the evening some of the younger officers conceived the idea of making a dash for safety; saying, if we must die we may as well perish in the attempt to get away as be butchered on this miserable hill. They talked the matter over with the Commander and he acquiesced if the wounded could be taken care of. Those fatally wounded magnanimously agreed to the plan saying it would do them no good to have the rest remain and perish with them.

Arrangements were quickly made; the best pack animals were used as mounts for those whose horses had been killed, the howitzers were buried and the signs obliterated; the wounded that could be taken were made as comfortable as possible, and, in short, everyone that could go moved quietly out before midnight. Every moment the Indian yell was expected to ring out when some picket would perceive the moving soldiers. But the Indians were resting from the fatigue of the continuous fighting and thought to find their foes camped on the hill in the morning.

The fugitive soldiers rode hard that night and all the next day, arriving at the crossing of Snake River late in the evening. The river was so swollen and the men and animals so worn out from the long and perilous ride of more than eighty miles in about twenty hours, it was decided to remain on the north side till morning.

The friendly Nez Perces were there, ready and willing to render any possible assistance. Some of them went upon the high points and stood guard for

the weary soldiers. In the morning all were safely taken across by the faithful Indians and the almost famished soldiers were given a plentiful meal of boiled salmon by the kind hearted squaws, who also cared for and ministered to the wounded.

Late in the forenoon, as Colonel Steptoe's command was about to start out on the road to Walla Walla, Captain Dent, in command of reinforcements, rode into Camp. The Nez Perces courier had faithfully and rapidly carried the message for assistance to the Fort and the officer in command lost no time in responding to the call; and hence was already at Snake River with men and an abundance of rations which were sorely needed to prevent much suffering from hunger on the march to Walla Walla.

CHIEF LAWYER

Before reaching Walla Walla, Colonel Steptoe's command met a large body of Indians who displayed an American flag to show that they had nothing in common with the hostile northern tribes. They were Nez Perces under the leadership of Chief Lawyer, who already had learned of Colonel Steptoe's defeat by some means of Indian telegraphy, and who had come to offer their services to the Colonel to go back with him and fight the Spokanes and Palouses. It was a generous offer and greatly appreciated by the defeated commander, but owing to the sorry condition of his men and animals, he had to decline its acceptance.

Such incidents as the foregoing ought certainly to disprove the oft repeated saying that "There is no good in an Indian."

The journey to Walla Walla from Wolf's Landing was made in three days. The home coming of the men of the expedition that had set out from there in such high spirits some two weeks before was a very sad and sombre return. Many men and two popular officers had perished, many animals and quantities of supplies had to be abandoned, and two howitzers left upon the fatal field of Tohotonimme.

It was learned that, about two hours after Steptoe's command had slipped away from the fatal hill, the Indians made a general assault upon the camp and were astonished to find nothing but some crippled or useless animals and a small amount of camp equipment and supplies.

When the unfortunate ending of the Steptoe expedition was learned at Department Headquarters, Colonel Clarke ordered Colonel Geo. Wright, of the 9th Infantry, then stationed at The Dalles, Oregon, to assemble a sufficient force for the purpose and proceed into the country of the Spokanes, Palouses and Coeur d'Alenes and make those unruly savages feel the weight of the displeasure of the great White Chief at Washington for their shameful conduct in attacking Colonel Steptoe and his command while engaged upon a peaceful mission to better the condition of those same Indians.

Pursuant to these instructions, Colonel Wright assembled at Walla Walla a force of about 600 men composed of dragoons, infantry and artillery, reinforced by a band of friendly Nez Perces, and set out to chastise the Northern tribes for their treacherous attack on Colonel Steptoe. He proceeded to the vicinity of the Battle of Tohotonimme, but a little further west, and found the Indians awaiting him, drawn up in battle array. After a stubborn fight, he inflicted a crushing defeat upon them, killing a great many of them without the loss of a man on his side.

In a few days he again encountered them and caused them heavy losses in men and horses. They were now willing to sue for peace, some of the leaders coming to Colonel Wright's camp to get terms. Colonel Wright was a very stern and almost despotic character and showed no leniency to those who were guilty of any unjustifiable acts in the past, when they fell into his hands. There was no red tape to his procedure. He simply called the guard and ordered them immediately strung up by the neck till dead. He had a dozen or so hanged at one place up in that country in this summary manner, and the creek still bears the name of "Hangman."

While at his camp one day a Yakima Indian named Qualchien and his wife, a young and beautiful Indian woman, the daughter of a chief, rode up to have a talk with Colonel Wright about something or other; he wasn't given a chance to explain. He and his wife were both richly attired according to Indian fashion. The woman carried a lance, the pole decorated and carved and Qualchien carried a rifle. Colonel Wright had never seen this Indian before, but had heard he was a bad actor, so when he dismounted and approached, the Colonel said "Hand me your rifle." The Indian did so. He then called the guard, then ordered the sergeant to get four men and have this Indian hanged immediately. Qualchien was a powerfully built young Indian and struggled so with his captors that they had to call for assistance to get him to the tree. It is said that only fifteen minutes elapsed from the time he rode into camp until his body was dangling from the gallows tree.

When the squaw saw the men of the guard take hold of her husband, she hurled the lance she carried, the point penetrating the ground several inches, whirled her horse and rode off, like Virginius the Roman, to tell the Indian camp what deeds are done by white men.

Owhi, the father of this unfortunate Indian, was made a prisoner by Colonel Wright, but on the road

to Walla Walla he was shot to death, some one claiming that he attempted to escape.

When Colonel Wright arrived at Walla Walla he summoned the members of that tribe to meet him for a council at the Fort. They came at the appointed time. Colonel Wright, addressing them, said he had heard that some of them had joined the hostile Northern Indians in the recent troubles, and if any of those present had done so he would request them to make known the fact.

Thirty-five arose, admitting they had been with the Spokanes, Palouses and Coeur d'Alenes. Colonel Wright looked them over, picked four of the number, summoned the guard and ordered these four hanged immediately.

Wouldn't Colonel Wright have been an appropriate Grand Vizier for an old time Sultan?

The Nez Perces War of 1877

CHIEF JOSEPH

When hostilities broke out between the Nez Perces, who followed the leadership of Chief Joseph, otherwise known as the non-treaty Indians, and the settlers who were squatting on lands claimed by the former, in the month of June, 1877, the writer was a sergeant of Troop "K", First Cavalry, then stationed at Camp Harney, Oregon.

Before entering into a narrative of the events that followed, it will be necessary to devote a little space to the causes

that led up to the outbreak, and how a tribe that had been uniformly friendly to the whites since the representatives of both races, had met for the first time in the rugged mountain region near the headwaters of the Clearwater, during the early years of the last century.

The Nez Perces tribe of Indians had for generations lived upon and controlled an extensive territory in what is now embraced in Northeastern Oregon, Southwestern Washington and central Idaho. The first record we have of them is found in the journal of the Lewis and Clark expedition when these pioneer American explorers encountered a party of them in 1805 in the mountainous region well up towards the headwaters of the Clearwater River. They were, at first, naturally shy at meeting people of a different race, and kept at a safe distance until encouraged by signs and other manifestations that the white strangers meant them no harm; then approaching, timidly, they soon became on friendly terms with the newcomers, and considerable trading took place between them. It took many days for the white men to traverse the country occupied by these people and during that time they experienced nothing but friendly treatment at their hands.

On the return trip, the following year, Lewis and Clark also met with kindness and courtesy at the hands of these primitive people, and secured from them provisions and stock that aided greatly in mitigating the hardships of the journey homewards across the Rocky Mountains. From that time until the unfortunate trouble in 1877 they were never known to molest or mistreat any white men who happened into their country.

In 1855 Governor Stevens, of Washington Territory, made a treaty with the Nez Perces Indians in which a very liberal extent of country was allotted them and in which was included the Wallowa and Imnaha Valleys. Not many years elapsed, however,

before incoming settlers began to complain that the Indians had too much territory given them and that it should be curtailed. Since this kind of disposition was entertained by the white inhabitants an effort was made to induce the Indians to enter into another treaty whereby a considerable area of the lands previously granted them would be relinquished and made available for white settlement.

In a Council called for the purpose in 1863, a number of the chiefs were induced to sign a new treaty, giving up the area in question. To this, however, Chiefs Joseph, Looking Glass, White Bird, Ollicutt and others of the more independent spirits, dissented, alleging that those who signed the new treaty had no right to sign for them or give their lands away. Furthermore, it was asserted that the majority of the Chiefs who signed the new treaty were induced by false promises, or cajoled into doing so.

This uncertainty and resultant trouble was a natural sequence to the government's policy of recognizing the ownership and sovereignty of Indian tribes in the lands occupied and the right to make treaties and otherwise play the role of Independent Nations.

It must be admitted that in the broadest sense of abstract right, it was a just and honorable course to pursue. But as a policy of practical statesmanship, it must be classed as a failure and doomed to entail innumerable difficulties. The United States government asserted dominion over all the territory within its defined boundaries; then why recognize within those boundaries Independent Nations capable of entering into international obligations? It seems absurd! However, although it was in existence for a long time, it was finally abandoned fifty years ago. Since that time the Indian question has been settled for good as to policy, although it has taken many years to bring about the permanent peace now enjoyed. No more will the tomahawk and scalping knife of the savage inspire terror and dismay in our frontier settlements!

It is now only an incident of history; and a pathetic and humiliating incident, too; nothing that we can point to with pride.

But to return to Chief Joseph and his followers; there was uneasiness for a long time among all those immediately concerned, and many predictions that serious trouble would ensue were made.

During this time considerable friction occurred between those settlers who coveted the fertile and desirable lands in the localities mentioned and the Indians who claimed them as their rightful heritage.

The situation became so acute that another general council was called to convene at Lapwai in May, 1877, at which the government was represented by Gen. O. O. Howard, commanding the Department of the Columbia, and Monteith, the Indian Agent at Lapwai Reservation; and the Indians by practically all the chiefs, except a few of the more radical ones. After considerable time spent in speech making and spectacular display, a sort of a tacit agreement was entered into whereby all the non-treaty Indians present at the council agreed to go upon the Lapwai reservation, for a time, at least, until a permanent settlement could be arrived at, Chief Joseph among these. The 15th of June was the day set before which all must be on the reservation. It was recognized by all those participating in the deliberations of the council that the terms insisted upon by the representatives of the government were not satisfactory to the non-treaty Indians and that trouble might be expected at any time.

General Howard recognized the seriousness of the situation and notified all the troops in the Department except those in very remote locations, to hold themselves in readiness for an immediate movement, should the call be sent. Our Troop at Camp Harney was so notified.

Before the expiration of the time set for complying with the agreement arrived at in Lapwai, several

clashes occurred between Idaho settlers and non-treaty Indians in which each party sought to lay the blame on the other. It has never been absolutely determined who were the aggressors. However, this trouble had the effect of intensifying the bitterness between the Indians and the whites; and the former began to assume a threatening attitude and were gathering in large numbers in "White Bird" Canyon. Then the settlers, becoming alarmed and leaving their dwellings, poured into Fort Lapwai for protection.

At this juncture, General Howard ordered Captain Perry, of Troop "F", 1st Cavalry, to take his troop and Captain Trimble's Troop "H" and proceed immediately to "White Bird" Canyon and compel those refractory Indians to go upon the reservation. There was then just one other company of soldiers at Fort Lapwai, and that belonged to the Infantry branch of the service, which had to remain there to protect the Fort and the refugees.

Captain Perry had just ninety men, which comprised the strength of both Troops, and being short of officers, had to take Lieutenant Theller, of the Infantry, along as attached. The civilians also organized a company of volunteers to go along and aid Captain Perry if it became necessary to use force.

This small force—too small indeed for such a purpose—by forced marches reached White Bird Canyon on the evening of the second day and found the Indians occupying a very strong defensive position, prepared to resist any attempt to enforce the terms of the Lapwai agreement.

The Indians displayed a remarkable understanding of military strategy for a tribe that had had no experience in warfare within the memory of living man. But before this campaign, now beginning, was brought to a close, Chief Joseph was recognized as a military strategist of no mean order and gained from men thoroughly versed in such matters the highest enconiums for the wonderful ability displayed by him in many

bloody encounters with seasoned troops. It was amazing, too, how he managed to successfully make such a long and difficult march of at least fifteen hundred miles, encumbered all the time with his women and children and loose stock, with General Howard and a large force of soldiers close at his heels and other forces on the lookout for him ahead. He made a most gallant fight, and, unlike most Indian warriors, he and his people scrupulously refrained from in any way molesting or interfering with noncombatants during that long and arduous journey, although they passed through settlements with numerous inhabitants.

When at length, after losing large numbers of his faithful and gallant little band and his principal lieutenants having fallen in the many desperate encounters with the troops, he surrendered the remnant of his followers, he did so with the dignity and lofty bearing of a Marshal of France in times of Napoleonic disasters.

Not since Osceola made his splendid fight in the Florida Everglades, has any Indian leader left a cleaner record for splendid fighting qualities, or more punctilious regard for the rights of noncombatants.

It is not intended in this article, to give anything like a full and complete narrative of the many thrilling and spectacular events of this very remarkable campaign that stands unique in the annals of Indian warfare. That task has been performed by more than one writer in a very interesting and reasonably accurate manner. Our purpose is simply to touch on a few of the more salient features. For although none of the events that transpired in this first and last Nez Perces trouble took place within the present boundaries of our State, nevertheless, the habitat of the tribe embraced a portion of this territory; also because the Nez Perces had always exercised a commanding influence over practically all the tribes that dwelt in the extreme eastern portion of the State, such as the Palouses, Spokanes and Walla Wallas.

Being always friendly to the whites in the past, this salutary influence had, on more than one occasion, been effective in keeping less well disposed Indians from going on the warpath; thus giving indirect protection to settlers of Washington Territory.

On the morning of June 17th, Colonel Perry's small command reached the head of the White Bird Canyon about two o'clock A. M. and waited there till daylight. The evening before, at Mount Idaho, the citizens waited on Colonel Perry and urged him to go down to the Salmon River, where the Indians were encamped, and either compel them to go on the reservation, or punish them for their misdeeds. The citizens, minimizing the strength of the hostiles, told Colonel Perry that with his well armed and disciplined troops he would have no difficulty in vanquishing them if they showed fight. They little knew Chief Joseph or his men!

At dawn the command moved down the ravine by an old trail into the White Bird Canyon. High bluffs and mountains lined either side of the canyon, which gradually widened out as it approached Salmon River. The Indians were encamped on the banks of Salmon River in a thicket of willows, having in their front several rocky knolls and hillocks which hid them from the view of the approaching soldiers. They, however, were not unprepared; they knew every move that Perry was making, and numbers of them were lying behind the knolls and mounds awaiting the advancing troopers.

The little column formed in line as the Salmon River was approached, Perry's company on the left and Trimble's on the right. Some eight or ten citizens who accompanied the command were placed on the extreme left and told to occupy and hold a high knoll of strategical importance. The troops had scarcely formed in line when the Indians from the knolls and hillocks in front began to pour volley after volley into them. The soldiers, being mounted, were an easy mark for the Indians and many fell dead or wounded.

In the meantime the knoll occupied by the citizens was attacked and after losing two of their number, the others fled, leaving the left flank entirely exposed. Then the soldiers became panicky and the commander seems to have lost his head. Lieutenant Theller was sent with a dozen men to try and head off some Indians who were passing around the flank, evidently intending to cut off the only avenue of retreat, but they got him into a cul de sac and every one of the party was killed. It now became simply a question of getting out of there without suffering annihilation. There never had been the slightest chance for that number of men to win a victory over Joseph at that time, no matter how well they may have been commanded; but Captain Perry never gave evidence of being fitted for command in Indian warfare. During the Modoc war he was a failure and the men of his troop reluctantly admitted it. Major Trimble also, a nice gentlemanly old fellow, was anxious to see his men well treated and contented; but no one on earth would pick him as one qualified to lead fighting men in a critical juncture. He had under him a man, however, who possessed all the characteristics of a military leader and to whom more than any one else is owing the escape of so many from the death trap in White Bird Canyon; namely, Lieutenant-Colonel W. R. Parnell. He rallied the veterans of his troop—and there were numbers still belonging to it who served in the Modoc war—and keeping them in good order, retreated slowly through the canyon, fighting every inch of the way. Near the head of the canyon he encountered Colonel Perry with twelve or fourteen men, who was so confused that he thought it about sundown, when it was only seven o'clock in the morning.

The united little band now retreated slowly, having many miles to go before reaching safety. Before reaching Mount Idaho, the Indians made several attempts to cut off their retreat, but owing to the untiring efforts and watchful vigilance of Colonel Parnell, every attempt was checkmated. Colonel Perry had given

entire charge of the men's movements to Parnell. Before arriving at Mt. Idaho a party of citizens came to the assistance of the worn out and shattered troops. When the Indians saw the fresh contingent coming, they desisted from further attack and retired.

More than one-third of the little command that left Fort Lapwai on the evening of the 15th for the purpose of punishing the Indians who had failed to come upon the reservation according to agreement, and some of whom had committed some atrocious and unprovoked murders in the settlement in the past few days, perished at the hands of Chief Joseph's band of non-treaty Nez Perces.

Now indeed it developed into a real Indian war that will go down in history as one of the most memorable and doggedly contested in our annals.

Troops now came to participate in the conflict from every Western State and some even from distant Georgia. General Howard quickly assembled five or six hundred men, cavalry, infantry and artillery and took the field in person against Chief Joseph. It would seem to the ordinary person that the Indian Chief could not long withstand the onslaught of such a formidable array of seasoned and disciplined troops. But as a military strategist, the Civil War General was no match for the astute and crafty Nez Perce.

At the Battle on Clearwater on July 11th, General Howard's force certainly exceeded that of the enemy, but although claimed as a defeat of Joseph, because he retreated, yet no advantage was gained by the soldiers; and as the Indians retreated leisurely in good order, it might more properly be called a drawn battle. Here a splendid opportunity was given for a cavalry charge upon the retreating Indians. The ground was open and reasonably level; five troops of cavalry eager to be given a chance at the hostiles; but through the want of prompt decision or timidity on the part of the Cavalry commander, Colonel Perry, the opportunity was let pass.

Joseph was now well aware that fresh troops were pouring into Lapwai from every point of the compass and that if he remained he would surely be overwhelmed in a short time. He, therefore, decided to cross the Bitter Root Mountains into Montana and then on to the buffalo country and eventually enter "King George's" land. He and his entire outfit then entered upon the "Lo-lo" trail and passed over that very difficult range, entering the Bitter Root Valley, which had, even then, a large settlement. While passing through this settlement, he bought supplies from the settlers and didn't in any way interfere with persons or property.

In the meantime the Montana military commanders were notified to take steps to intercept him if possible. Without losing a moment's delay, that grand old veteran, General John Gibbon, summoned every available Company in the district, left Helena, crossed the Rocky Mountains, and reaching Fort Missoula on August 3rd, started with 163 soldiers and 30 citizens in hot pursuit of Joseph. He loaded his men in wagons and in spite of bad roads and rugged mountain ranges, he covered in one day the distance Joseph traveled in two. Joseph knew that he was well ahead of Howard's command and was consequently moving leisurely, not thinking there was any other force in pursuit.

On August 9th, at daybreak, Gibbon attacked the Nez Perce camp, springing a complete surprise on the wily Joseph. The Indians, dazed by the unexpectedness of the attack, were in a panic for some time, running in every direction for safety and losing many men from the steady fire of the soldiers. Soon perceiving that the attacking party was numerically inferior, they rallied at the call of their leaders and the fiercest fighting that perhaps ever took place in Indian warfare was continued all day long till the shadows of night prevented further combat. Then both sides realized how heavy their losses were. The Indians left 89 dead upon the field. General Gibbon's command suffered

69 casualties out of a total 194, among which were three officers killed and four wounded, including the General.

While neither side could rightfully claim a victory, still by the energy displayed in gathering a force, the vigor of the pursuit, and the matured judgment evident in the plan of attack, together with the dash and personal courage manifest in the close quarter fighting, stamp General Gibbons as an ideal Indian fighter, and entitle him, more than any of the other military commanders, to the laurels of victory.

That was the last time Joseph was caught napping. About ten days after the "Big Hole" battle, Joseph inflicted some losses on Howard's command in the vicinity of the Yellowstone Park and captured most of his packtrain.

The next encounter of any moment took place at Canyon Creek when Colonel Sturgis, with six troops of the 7th Cavalry, caught up with Joseph. Some sharp skirmishing took place for several hours, in which Joseph sought to cover his retreat, and after nightfall succeeded in making good his escape. Sturgis and his men were thoroughly exhausted and could follow no farther.

Joseph now proceeded leisurely, for he knew that Howard and Sturgis were now far behind. But he was unaware that another army under General Miles was making forced marches to head him off. While resting with the remnant of his tribe on the north side of Bear Paw Mountain, within a short distance of the boundary line, which he could have easily crossed and made good his escape, he met his Waterloo. But as his horses were worn out and needed rest he loitered, as he thought, in absolute security.

In the meantime, Miles, with eleven companies, was coming as rapidly as horses could carry them. On the 3rd of October, the weather being cold and stormy, Miles came in sight of Joseph's camp and galloped along to make the attack as soon as possible.

The Indians, however, saw them coming and were prepared to meet them. Miles had a great superiority of numbers, but Joseph's men, worn out and exhausted though they were, put up a gallant fight and inflicted severe losses upon their opponents. The battle lasted till nightfall, the Indians still unbeaten. During the night, White Bird, with some thirty or forty of his followers, escaped and crossed into Canada. Here they found friends and refuge in the camp of the great Sioux Chief, Sitting Bull. Joseph also could have made his escape by leaving his women and children which, indeed, he was too high minded to do. On the 4th he surrendered the remnant of his little army, consisting of 87 men, 184 squaws and 147 children. About half of the men were wounded. Miles' column had 24 killed and fifty wounded.

Joseph's strength, according to the most reliable authority, never exceeded 300 fighting men. During the three and a half months of fighting and retreating, 151 of them were killed and 88 wounded. The soldiers suffered in the campaign, 126 killed and 140 wounded. There were probably a dozen or more citizens who met death at the hands of the Indians.

Upon surrendering, Joseph was promised that himself and followers would be sent back to their own country and placed on a reservation. This promise was not kept. The entire outfit was sent to Fort Leavenworth, Kansas, and in the following Spring were placed on a very unhealthy reservation in the Indian Territory, where a great many succumbed to the malarial climate, so different from the healthy climate of the Northwest, to which they were accustomed.

In 1885, through the untiring efforts of General Miles and many other friends of square dealing, even with savages, Joseph and the remnant of his people were taken back and placed upon the Colville Reservation, in Northeastern Washington, in a healthy climate, among congenial surroundings.

ON page 28 of this volume as a part of Chapter Three a brief history is given of the book, "Washington Territory West of the Cascade Mountains," produced in facsimile form as an appendix following, from an original copy, for which twenty-five dollars was paid.

The edition of 5,000 copies, put out in December, 1870, has long since been exhausted and become so rare that book collectors and government libraries have paid twenty-five dollars the copy, and for aught I know more in some cases, but that much in a number of instances.

Looking over the venerable work, the first book, or if you prefer to call it "booklet", published in the commonwealth of Washington, with a view of making extracts as a foundation of the beginning of the history of the territory, for this volume I could not make up my mind where to begin or where to stop, and so, at heavy expense have had plates made, which will illustrate how the pioneers wrote and thought and how the printers printed, more than half a century ago. The complete book except the advertisements follow.

An interesting incident referred to elsewhere in this volume, the collection of fifty-three varieties of flowers growing in the gardens and commons of Olympia in the open air in December, did as much to advertise the territory as the book, and, in fact, I believe more. It was a case of where we "builded better than we knew."

EZRA MEEKER.

WASHINGTON TERRITORY

WEST OF THE

CASCADE MOUNTAINS,

CONTAINING A DESCRIPTION OF

PUGET SOUND,

AND RIVERS EMPTYING INTO IT,

THE LOWER COLUMBIA, SHOALWATER BAY, GRAY'S HARBOR, TIMBER, LANDS, CLIMATE, FISHERIES, SHIP BUILDING, COAL MINES, MARKET REPORTS, TRADE, LABOR, POPULATON, WEALTH AND RESOURCES.

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By E. Meeker

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PREFACE.

With but one inhabitant to eight hundred acres, and with less than one per cent. of the soil in cultivation, Washington Territory presents a large field for enterprise and industry. Comparatively unknown, and until recently unheeded, the progress of settlement has been slow. The purchase of Alaska, and following upon that the certain development of the great fisheries of the northwest coast, together with the admirable facilities for ship building, have all combined to hasten the development of this region.

Since the Northern Pacific Railroad Company have begun in earnest to build their road, already employing a numerous force in grading upon their eastern terminus, and have sent out a large corps of engineers to locate the road from Puget Sound eastward, an inquiry has sprung up respecting this hitherto comparatively unknown region that requires something more than individual efforts to satisfy. This book is offered to the public with a hope that it may supply the information sought, in a compact form suitable for transmission through the mails to all parts of the country. The great aim has been to avoid overdrawn statements, and to give the resources as they are, as far as it has been possible to obtain statistics and information.

WASHINGTON TERRITORY

West of the Cascade Mountains.

GENERAL DESCRIPTION

That portion of Washington Territory West of the Cascade Mountains, which is sometimes known as Western Washington, is bounded on the North by the 49th parallel of North latitude, to the middle of the channel which separates the continent from Vancouver Island; thence Southerly through the middle of said channel and of Fuca's Straits, to the Pacific Ocean on the West, by the Pacific Ocean; the extreme Western limits, reaching to longitude 47° 41′ West from Washington, on the South, by the middle of the channel of the Columbia river, the most Southern point being in North latitude 45° 33′, and on the East, by the summit of the Cascade range of Mountains, extending Eastward approximately to longitude 44° 30′

Thus it will be seen that the extreme limits extend over nearly four degrees of latitude and three of longitude. While the square contained in these limits would embrace an area of 35,224 square miles, the actual area will approximate only to 25,500, in consequence of Vancouver Island extending South of the 49th parallel of latitude, by the deflection of the coast line from a true North and South, of nearly one-half a degree of longitude, making the Northern boundary that much longer than the Southern and again, by the Columbia river turning sharply to the North for thirty miles from the point where the Willamette falls into that river, and then again turning abruptly to the West, thus cutting off a large area from our South-West corner. While the Eastern boundary line is 228 miles, the Western, or coast line is but 148, in consequence of this inroad made by Vancouver Island, and the deflection to the North of the Columbia river as before stated.

That portion of the State of Oregon West of the Cascade range lies adjoining, to the South, and British Columbia to the North. It will be seen by this that until the recent purchase by our government of the Russian Territory Alaska, that this region embraced the extreme North-West limits of the United States.

In a political point of view, it will probably soon enjoy the same notoriety, as Alaska no doubt will be joined to Washington for governmental purposes.

The basin of Puget Sound, and the country lying to the South and extending to the Columbia River, is but a continuation of the Willamette Valley, of Oregon having the same general width, bounded by the

same natural barriers, the Cascade and Coast Range of Mountains, taking the same general course for an aggregate distance of nearly four hundred miles, and each removed from the coast, say on an average of fifty miles. The magnificent valley of the Willamette, with its broad and fertile prairies, we do not view with a jealous eye, well knowing that in the no distant future, her wealth and power will only increase that of the Sound region. We have called to mind that valley in consequence of the relative configuration of the two, seemingly separated only by the broad channel of the Columbia. While that of the Willamette is mainly prairie the region North of the Columbia is principally timber

Three general divisions or characteristics may be noted to embrace all the variations of soil and exposure of this region, viz

1. The mountainous, or that which from its altitude seems inaccessible.
2 The lower foot-hills and table lands
3 The river bottoms and tide lands adjacent

The mountainous region embraces an area equal to one-fourth of the whole. The mountains, up to the perpetual snow line, being covered with forests of magnificent timber, that hereafter will in part be made available by the channels of the rivers which rise in the mountains and flow into the Sound, as the timber nearer the navigable waters is consumed, and prices advance in consequence sufficient to warrant the increased expense. The soil is clay and gravel, with patches of vegetable mould here and there, covering the underlying strata In other exposures the bare rocks rise to the surface, but seldom interfere with the growth of timber

The general course of the Cascade Range is nearly due North and South, and traverse the whole length of the Territory in an unbroken chain, the Western slope, the great water shed, furnishing the fountain-head of nearly all the rivers of note falling into the lower Columbia or the Sound.

First come the North and South forks of Lewis river, rising South of Mt. St. Helens, in the extreme Southern part of the Territory, and flowing a little South of West, finally joining their waters together about five miles from the mouth, and emptying into the Columbia a little above the town of St Helens, on the opposite bank and seventy five miles from the ocean Next, to the North, are the head waters of the Cowlitz rising to the North of St Helens and between that and Mt. Ranier, and flows in a South Westerly direction a distance of seventy-five miles; then turning sharply to the South for twenty-five miles, empties into the Columbia abreast the town of Ranier on the opposite side of the river, and sixty miles from the mouth of the last river Rising in the immediate vicinity of the head waters of the Cowlitz and starting from a point a little further to the Eastward, and closer up to Mt Ranier, is the Nisqually, which flows in a North Westerly direction for eighty miles, receiving numerous smaller streams; and finally empties into Puget Sound seven miles South West of Steilacoom and eleven from Olympia, being almost on a direct line between these towns

The Chehalis' head waters are found forty miles North East of the mouth of the Columbia River, running East for fifteen miles receives the Newaukum river thence nearly due North five miles and is

joined by the Skookum Chuck Both of these last rivers come in from the East and head in the foot-hills of the Cascade Mountains, between the headwaters of the Nisqually and the Cowlitz, just described. From the mouth of the Skookum Chuck the Chehalis turns abruptly, first North-West, and then West, and empties into Gray's Harbor, fifteen miles from the Pacific Ocean, and fifty North of the Columbia, having traversed by its channel about eighty miles, although it is but thirty-two miles from the head-waters to the mouth, in a straight line. Numerous smaller streams fall into the Chehalis at intervals, and in the aggregate make a stream of great importance

Next to the North from the Nisqually, and rising from the Western spurs of Mt. Ranier, comes the Puyallup, flowing for forty miles in the same general direction as the Nisqually, and distant from it twenty-five miles, joining the waters of the Sound in that part known as Commencement Bay, being the South-West part of the inland sea named on the charts as Admiralty Inlet, but here popularly known as Puget Sound Immediately to the North of the head-waters of this last named river, and in close proximity, we find the fountain-head of White river, flowing in the same general direction for forty miles, and at an average distance of not more than nine miles from the Puyallup, losing a portion of its water through the channel called Stuck, that falls into the Puyallup, then turning sharply to the North, receives Green river five miles below where Stuck had left it, and which more than compensates for its loss; twelve miles further on, it forms a junction with Black river, and here assumes the name of the Duwamish: then bearing more to the North-Westerly ten miles further, and empties into Elliot Bay, an arm of Puget Sound, three miles South of the town of Seattle, and distant from the mouth of the Puyallup twenty-two miles, in nearly a due North course

The waters of Cedar river find the same outlet, having emptied into Black river, deriving its fountain head from this same range of mountains forty miles to the Eastward

The next river of note is the Snoqualmie, from which that famous pass through the mountains, for wagon and railroad, derives its name, rising near the summit, in latitude 47° 28′ and at an altitude of only three thousand feet above the ocean level, flows nearly due East twenty miles or more, receives accessions from the North-East, and makes that desperate leap of two hundred and seventy feet, the wonder of the coast, the Niagara of the Pacific Afterwards, this river assumes the name of Snohomish, flows in a North-Westerly direction for forty miles, and joins the waters of the Sound abreast the Southern end of Whidby's Island, and North of the outlet of the Duwamish thirty-two miles, and six miles East, as the bay has borne that much to the Eastward

A small river called the Statukwhamish, nearly forty miles in length, and flowing West, after dividing its waters five miles from the mouth, continue in the same general course, enclosing a strip of land five miles by one and a half, and finally join the waters of the bay sixteen miles north-west of the mouth of the Snohomish, abreast the Northern end of Camano Island, and a little North of the latitude of Port Townsend on the opposite side of the Sound.

Next comes the river Skagit, the largest and most important of all; the accumulated waters of which are said to exceed that of the Willam-

ette, gathering its fountain waters from the very summit of the mountains, and embracing a full degree of latitude of drainage along the range, and drawing a part from British Columbia on the North, flows in the main a little South-Westerly, dividing seven miles from the bay, joins the Sound by two separate channels, seven miles apart, after having traversed a region of nearly one hundred miles in length. The junction of the Southern channel with the bay, is in latitude 45° 23', and hence but fifty miles from our Northern boundary, and a little South of the extreme point of Vancouver Island.

Next, and last, on the East side of the Sound is the Nooksahk or Lummi, rising to the North-West of Mt. Baker, flowing, first, to the North-West for thirty miles, then curving sharply to the South-West and at right angles with its former course, continues for sixteeen miles, and finally divides, delivering the most of its waters into the North end of Bellingham Bay, and the balance into Lummi Bay some three miles to the Westward, making the aggregate length of this river about forty-six miles

These rivers, which have been enumerated, do not comprise more than half of the mountain rivers West of the Cascade Mountains, although by far the most important, as those rising in the Olympic Mountains, and emptying into the Sound on the one side, and on the other into the Pacific Ocean, are far shorter in their course, are confined more to the mountain side, and have less of alluvial bottoms upon which to rely for arable land

The amount of arable land to each of these river bottoms, the depth and width of their channels, together with the extent to which they are navigable, will all be noted under the appropriate heading

Our mountainous, or first division, although occupying so large an area, is not without some attendant advantages; the furnishing the material for our valuable alluvial bottoms and tide land, of this last, which it is estimated that there are one hundred thousand acres on the East shore line of the Sound alone, the avenues of inland navigation of these mountain rivers, and the further reaching advantages of vast and inexhaustible quantities of timber, that can be made available through their channels, not to say anything of the climatic influence of this grand range of mountains, deflecting the Southern and warmer breezes of winter along our coast line, giving us a climate in winter as mild as points on the Atlantic near seven degrees South of us.

"The foot hills, or clay loam district, is much more extensive than our people generally suppose. A tract of it extends around the entire Olympian range, with very limited exceptions. Along the Straits and Hood's Canal it may for a short distance be wanting; on the western and Southern slopes it is quite extensive. East of the Sound, and along the foot of the Cascades, it is quite extensive, and probably reaches South to the Columbia River But the great clay loam district lies between the Chehalis river and the Columbia. It also includes Lewis county, and the emigrant will bear me out in the conclusion that one-half of the surface of our Territory West of the Cascade Mountains, is a strong brown clay loam, fertile and productive, eminently calculated, when cleared up and judiciously farmed, to make, in our equable climate, a good wheat growing country, as well as all other cereals It may be objected that this section may be considerably bro-

ken by ridges, but the excellent and enduring quality of the soil being composed of decomposed basalt, which is considered by agricultural writers as an enduring basis for farming, will amply compensate for its uneven surface. By upheaval this district has been raised above the level of the boulder formation, and many of its ridges penetrate the drift, reaching nearly to the Sound. The traveler along the Portland stage road from Skookum Chuck to Olympia, listening to the grating of the carriage wheels along the gravely plains, is probably unaware that on either side, to an indefinite extent, the ridges more especially East of the road, are generally free from gravel, and are well calculated in the no distant future to amply repay the toils of the husbandman.

"The boulder district lies mainly to the South and East of the Sound, extending back in streaks and patches from ten to thirty miles. To a limited extent it is found South-West of the Olympian range, and also to some extent in Clarke county, back of Vancouver. I am confident that its area does not exceed more than one-half of the clay loam tract. The emigrant will take notice that there is considerable good farming land in this last named disirict. It is probably from two to three hundred feet in depth from the surface of the gravely and sandy prairies to the bed rock, which, as we examine to the Northward, appears to pass from the rocks of the trap family into the granite."

The above extract, from the pen of an old and observing citizen, although it may not be exact as to the proportionate distribution of the different characters of soil, is in the main correct. I should not place the extent of the clay loam district at more than one-third of the general surface, and yet it is determined only by estimation; and again it would seem that the gravelly or boulder district would cover an area equal to that of the clay. But to neither of these qualities of land do we at present call the attention of the immigrant, with the same confidence as we do to the alluvial bottoms and tide lands. True, farms will be made on these clays, and in many localities the choicer locations are profitably occupied; but to warrant a general occupancy, the relative price of labor and produce must change; land must assume a value beyond that of the improvements; markets must create a demand beyond the productive capacity of the more favored localities, and then these lands can and will be profitably occupied. To give a general statement of the altitude of these lands would scarcely be possible, as they vary so much in the different parts of the Territory. Immediately adjoining the Sound, and including the islands, the average would probably range to three hundred feet above tide water, while other portions, as for instance the Cowlitz hills or mountains, as they are sometimes called, are probably one thousand feet above the ocean level. This region is best described as a broken country, yet not so much so as to materially interfere with the construction of wagon roads of easy grade, and at comparative light cost, as the surface is often level for miles, and then a change will occur, to a higher or lower level, as the case may be. In the lower spots, where water or the least wash accumulates, the surface is rapidly covered by a vegetable mold, and forms valuable and enduring meadows. Thousands of such places lie dormant for the industrious to improve, when our more valuable lands have been taken and our markets justify the increased costs of improvements and production. This region is principally timbered, as before stated, and in many pla-

ces more beautiful or majestic forests were never viewed by man. This consists of fir, cedar, hemlock, spruce and pine, interspersed in favorable localities, with alder, ash, crab-apple, wild cherry and balm. Underneath all this is an intermixture of underbrush, consisting of hazle, tag-alder, willow, hard hack, vine maple, huckleberry, and an evergreen known as sal-lal, besides many other varieties too numerous to notice.

Water is abundant, and of the purest quality. Each of the rivers mentioned, besides others of less note, and a net-work of smaller creeks and spring branches, flows either in whole or in part through the country, giving almost universal diffusion of living enduring surface water. A few notable exceptions will be mentioned as we proceed. Even on the smaller islands of the Sound, beautiful springs burst forth, which are not excelled in any country. In addition to these are found numerous lakes, some covering but a few acres, others covering miles in extent, abounding in fish, and the water clear and pure. A ledge of rocks, or what is known as the bed rock, is seldom exposed to view. That portion of the land that is gravelly or rocky is composed of detached pieces, generally washed rock, from the size of a finger-stone to that containing several cubic feet. In certain localities, large boulders are scattered promiscuously over the surface, in other places fine gravel, and running insensibly into sand, from same formation. More than half of the prairies, exclusive of the tide flats, are of this sandy and gravelly nature, affording a rich, but not abundant pasturage. Other prairies are found, of the very richest of soil, small, it is true, comparing with the broad reach over the great West, yet sufficient to be prized by the possessor as of great value. Some, consisting of but sufficient for one farm, while others are of several square miles of extent, and of all intermediate sizes.

The river bottom and tide lands, although they comprise but an inconsiderable area in comparison to the whole, yet they are of great value, and destined to build up happy and prosperous communities immediately withiu their confines.

Balm, alder, ash and maple predominates on the lands, and we are always relieved and warned of the change of the season by the fall of the leaf, a thing we do not see in the forests of the fir and cedar, that retain their everlasting and perpetual green. The tide lands at the mouths of these rivers are of the same material, and called such so long only as the highest tides cover their surface. These always occupy space that was once the bay, and in many places have encroached far out upon the ancient domains of this inland sea, the Sound, and the process is still going on, as portions of that which the earliest settlers saw as tide land, is now covered with young timber, and another advance made from the front upon the shoals, to compensate for the loss. It seems superfluous to say that this soil is not excelled upon the face of the globe, and yet did we not assert it, we should fail to do justice; but of this we shall particularize under the more appropriate heading on the farming lands, to be found elsewhere.

In conclusion, while the general surface, covered as it is mainly with dense forests of fir and cedar, seem uninviting to those just from a strictly agricultural region, with its broad prairies, yet the impartial eye cannot fail to detect the wealth that lies dormant in our soil, situated

as it always will be, in the very midst of a manufacturing and commercial people, taxing it to its utmost capacity for sustenance, and calling upon other and remote localities to supply the deficiency, always ensuring a highly remunerative market.

NAVIGABLE WATERS.

First, and greatest comes Puget Sound, and by that we mean the whole of the waters of this inland sea, although technically speaking they are divided into several parts by geographers, as the Straits of Fuca, Admiralty Inlet, and Puget Sound, but we shall call the whole, as it is now universally and popularly known, Puget Sound.

Breaking in from the ocean in North latitude 48° 26′, longitude 47° 40′ West from Washington, and forming our North-Western boundary, these waters rush through an open channel twelve miles in width, with no obstructions whatever at the entrance, running nearly due East a distance of eighty miles, sagging a little to the South, with a comparatively smooth shore line, finally to be arrested by Whidby's Island, that suddenly check them, turning a part Northward through Rosairo Straits, and the intricate and numerous channels of the Archipelago de Haro, into Bellingham Bay and the Gulf of Georgia; the other portion turning South, bearing Easterly, with an average width of nearly six miles, for seventy miles, and finally takes a shoot through that narrow passage known as the "Narrows," one mile wide and four long, bears South-Westerly, spreading out or ramifying into numerous bays and inlets, encompassing still other islands, and finally looses itself at its extreme Southern limits, at or very near the centre of this region of which we write, Western Washington, having traversed in all nearly two hundred miles.

Eighteen miles South from where the waters first strike Whidby's Island, is an offshoot, called Hood's Canal, averaging two miles in width, bears more to the South-West a distance of fifty miles, then curving suddenly to the North-East fifteen miles, very nearly touches the waters of the Sound proper, after having been separated in the aggregate circuit of one hundred and fifty miles, and virtually enclosing as an island, the county of Kitsap, with its numerous inhabitants and valuable improvements.

Then, again, is the channel back, or East of Whidby's Island, around Camano Island, through Deception Pass again into the Straits, and Swinomish slough, and by this last channel again into Bellingham Bay.

To give a better idea of the vast magnitude of these waters, we extract from the tabular statement from the United States Coast survey of the coast line, as follows:

Straits of Juan de Fuca	161
Rosario Straits, Canal de Haro, Gulf of Georgia, &c	627
Admiralty Inlet	334
Puget Sound	280
Hood's Canal	192
Total	1,594

This measurement is in nautical miles, which reduced to statute miles, gives a shore line of 1,833 miles.

Did we neglect to say that in all this inland sea, not an unseen danger to shipping exists, that the waters are deep, the shores bold, the anchorage safe, and the shelter from storms complete in almost every nook and corner, except in the Straits alone, we would fail in giving a correct idea of this succession of harbors to the distant reader. Immediately upon turning to the South, the Sound is shut in from the ocean storms by the snow-capped Olympian mountains, and by its tortous and uncertain course, leaving a prominent headland here and a point of land there, still giving additional security against the force of the wind, never ceasing to fortify in all its wanderings, until it is one of the most complete and extensive harbors in the world, incomparable, because none are found with which to compare it, capacious beyond the possible wants of future ages, yet safe as the smallest land-locked harbor of the world.

The rivers falling into the Sound are all navigable for steamers of light draft, generally almost up as far as their alluvial deposits extend, and in one instance, as on the Skagit, a stretch of fifty miles. Some of these are, or have been obstructed by drift, through which channels can be opened. Above the point mentioned they become more rapid and uproarous, and will be used in the future principally as the channel through which timber will be run to tide-water.

The lower Columbia river is the next in importance and grandeur. Rising in the Rocky Mountains, draining an immense sweep of country, and accumulating waters in volume second to none on the coast, breaks through the barriers of the Cascade range of mountains, finally emerges from the confines of the mountain gorge, and enters Western Washington in latitude 45° 50′, longitude 45°. It is here we have first to deal with it as a part of the region described, after having made its last leap at the Lower Cascades. From this point it has an average width of one mile, and it is one hundred and forty miles by the river to its mouth. The river runs sluggishly throughout this distance, more or less affected by the tide. The general course is West, bearing somewhat to the North. The depth of the channel on the bar is twenty-four feet. Ocean steamers ascend the river as far as Vancouver, a distance of over one hundred miles. It is a beautiful and safe river for vessels of suitable size, when once inside the bar, and upon its banks are found several thriving towns and settlements, some large milling establishments, and the most extensive fishing firms of the North-West coast.

The entrance to Shoalwater Bay is twenty-seven miles North of the mouth of the Columbia River. "Toke's Point," or the extreme North-West point of Cape Shoalwater, and the Northern shore at the entrance of Shoalwater Bay, is in North latitude 46° 43′, and longitude 47° 02′ West from Washington. The bay covers an area of about one hundred and fifty square miles, is of an irregular shape, and extends South parallel with the coast to within three and a half miles of Baker's Bay of the Columbia waters, and only separated from the ocean by a narrow strip of land of an average width of one and one-half miles. The principal river emptying into the bay is the Willopah, which comes in from the East, and is navigable for vessels drawing twelve feet of

water, a distance of fifteen miles from the mouth. The whole length of this river is not more than thirty-five miles, but upon its banks are found some of the finest agricultural lands of the Territory.

The South point of entrance into Gray's Harbor is at Chehalis Point, which is fifteen miles North of Toke's Point. The entrance is about three-fourths of a mile in width; there is about eighteen feet of water on the bar, and the harbor is considered safe. The bay covers an area of about eighty square miles. The Chehalis joins the bay sixteen miles from the entrance to the harbor, and at a place nearly east from Chehalis Point. This river is one of the most important in the Territory, draining a very extensive district of rich agricultural land, both alluvial bottom and table land, and upon which there are many settlers. The river is navigable for light draft steamers for sixty miles. Good sized schooners can ascend the river to the mouth of the Satsop, a distance of twenty miles. The tide sets in that far, and also up other streams emptying into the Chehalis, making eighty-five miles of tide water navigation, immediately adjacent to rich alluvial bottom and tide lands.

SOIL AND CLIMATE.

Soil, without suitable climate, is of no avail to the husbandman, while ever so equable a climate is alike unavailing without the soil. But take the two requisites combined, and we have that which offers inducements to build up prosperous communities and wealthy cities.

Western Washington has not the uniformly rich soil of an Iowa or Illinois, neither has it the broad prairies of the localities mentioned, yet, as elsewhere described, we find much good soil, numerous desirable localities for the farmer, some occupied and others unoccupied, and small prairies are found in the timber, usually prevailing. This climate is excelled in no part of the globe for the production of grass, the cereals of all kinds, and the hardier vegetables. In this connection we shall give a somewhat extended notice of such as have been tested.

But first we must notice the climatic influences that bring about these results. Meteorological observations taken at Fort Steilacoom, in latitude 47° 7′, and near the centre of the region described, for a series of years, give the following result: Mean of four years: January, 38° 1′; February, 40° 7′; March, 41° 8′; April 48° 6′; May, 56° 6′; June, 61° 1′; July, 64° 9′; August, 64° 0′; September, 56° 9′; October, 52° 6′; November, 46° 2′; December 38° 3′. For the year, 50° 8′; three winter months, 39° 0′.

By consulting the meteorological tables for the State of Ohio, we find that the average of the State, for a series of years, varies less than one degree from that of Fort Steilacoom; that although we are seven degrees of latitude further North, yet we have the average temperature of Central Ohio. By observing closely the temperature of the different months in the year, and comparing the two localities, it soon becomes apparent that although the average for the year is equal, yet the climate of these places differ widely. Our summers are much cooler than those of Ohio, while our winters are warmer. So noticeable is this feature of this climate, and so insensible is the change from the one

season to the other that many persons are ready to classify our seasons as but two, the wet and the dry. This is only partially correct, for in fact there is scarcely a month in the year that we do not have showers, while many weeks, and sometimes months of the winter, or wet season, is pleasant and dry. February is our great wheat sowing month. The cause of all this difference in temperature between the Eastern and Western portions of the continent, is admirably set forth in the speech of Hon. Chas. Sumner, on the purchase of Alaska. He says:

"All this is now explained by certain known forces in nature. Of these, the most important is a thermal current in the Pacific, corresponding with the Gulf Stream in the Atlantic. The latter having its origin in the heated waters of the Gulf of Mexico, flows as a river, through the ocean, Northward, encircling England, bathing Norway, and warming all within its influence. A similar stream in the Pacific, sometimes called the Japanese current, having its origin under the equator near the Phillippines and the Malaccas, amid no common heats, after washing the ancient empire of Japan, sweeps Northward, until forming two branches, one moves onward to Behring's Straits, and the other bends Eastward along the Aleutian Islands, then Southward along the coast of Sitka, Oregon and California. Geographers have described this 'heater,' which in the lower latitudes is as high as 81° of Farenheit, and even far to the North it is as high as 50°. A chart now before me, in Findlay's Pacific Oceau Directory, portrays its course as it warms so many islands and such an extent of coast. An officer of the United States navy, Lieut. Bent, in a paper before the Geographical Society, of New York, while exhibiting the influence of this current in mittigating the climate of the North-West coast, mentions that vessels on the Asiatic side, becoming unwieldy with accumulations of ice on the hull and rigging, run over to the higher latitude on the American side and 'thaw out.' But the tepid waters which melt the ice on a vessel must change the atmosphere wherever they flow.

"I hope you will not regard the illustration as too familiar, if I remind you that in the economy of a household, pipes of hot water are sometimes employed in tempering the atmosphere by heat carried from below to rooms above. In the ecouomy of nature these thermal currents are only pipes of hot water, modifying the climate of continents by carrying heat from the warm cisterns of the South into the most distant places of the North. So, also, there are sometimes pipes of hot air, having a similar purpose, and these, too, are found in this region. Every ocean wind from every quarter, as it traverses the stream of heat takes up the warmth and carries it to the coast, so that the oceanic current is reinforced by an ærial current of constant influence.

"But these forces are aided essentially by the configuration of the North-West coast, with a lofty and impenetrable barricade of mountains, by which its islands and harbors are protected from the cold of the North. Occupying the Aleutian islands, traversing the peninsula of Alaska, and running along the margin of the ocean to the latitude of 54° 40′, this mountain ridge is a climatic division, or, according to a German geographer, a 'climatic shed;' such as perhaps exist nowhere else in the world. Here are Alps, some of them volcanic, with Mt. St. Elias higher than Mt. Blanc, standing on guard against the Arctic Circle. So it seems even without the aid of science. Here is a dike

between the icy waters of Behring's Sea and the milder Southern ocean. Here is a partition between the treeless Northern coast and the woodier coast of the Kenanians and Koloschians, a fence which separates the animal kingdom of this region, leaving on one side the walrus and ice fox, from the frozen ocean, and on the other side the humming bird from the tropics. I simply repeat the statements from geography. And now you will not fail to observe how, by this configuration of thermal currents of ocean and air, are left to exercise all their climatic power."

Mean annual precipitation of rain and melted snow, for six years, from Nov. 1849 to 1855. Location, Steilacoom Station, W. T. Latitude, 47° 10′. Altitude, 300 feet: January, 9.54; February, 5.16, March, 4.56; April, 4.77; May, 1.86; June, 1.97; July, 0.34; August, 1.54; September, 2.67; October, 4.43; November, 8.73; December, 9.92. Recapitulation: Spring, 11.19; summer, 3.85; autumn, 15.83; winter, 22.62. Total, 53.49.

The following extract from meteorological register, kindly furnished by Capt. James S. Lawson, of the United States Cost Survey, and taken on board the brig *Fauntleroy*, at different points on the Sound, although not extending over so long a period of time, is of recent date, and serves to illustrate the general average:

"Three winter months, 1868-69: clear, 32 days; foggy, 14; rainy, 45. Amount of rain fall, 20,248. Mean temperature, 41°. Three spring months of 1869: clear, 59; foggy, 5; rainy, 29; amount of rain fall, 3,756. Summer: light showers—rain guage not in use; highest temperature for June, 94°; lowest, 42° 3′. Three fall months: clear, 33; foggy, 8; rainy, 38; amount of rain fall, 14,123. Mean temperature, 55°. Three winter months, 1869-70: clear, 19; foggy, 21; rainy, 49. Amount of rain fall, 19,752. Mean temperature, 42°. Three spring months: amount of rain fall, 6,058; snow, three days in March. June—clear, 21; rainy, 9; amount of rain fall, 0,431. Mean temperature, 62.

Taking into consideration our moist autums and springs, and the comparative warm winters, no wonder that we have grass green nearly the entire year, and are able to make up a handsome bouquet from the open gardens in January.

The *Olympia Transcript*, in its issue of January 15, 1869, says:

"On Monday last, Mr. H. R. Woodard, of West Olympia, sent into this office a bouquet of flowers, containing *twenty-two* varieties, gathered from his open garden on that morning, January 10th, 1870. Among them we notice the following common summer varieties: The Myrtle, Marigold, Daisy, Roses—several varieties, Flowering-cabbage, Wall-flower, Shell-flower, Honeysuckle, Crysanthum, Camomile, etc., etc. If any other place on the globe, in 47° North latitude, can produce such a selection of flowers, twenty-two different kinds, on a space of less than half of a town lot, in the open air, on the East and North side of the house, and fully exposed to the North, North-East and East winds, let it speak out and tell its story. Mr. Woodard's is not the only garden in which flowers are to be found. There are many of them. In our own little garden we find in full bloom a number of Carnation Pinks. Who can beat Olympia?"

No climate can be better adapted to the growth of grass than this, and the soil seems eminently suited to its production.

Following upon this comes the summers, with their cool nights and but few excessively hot days, which altogether make one of the best dairy countries on the continent. The business itself is in its infancy, not yet able to supply the home demand for butter, and no attempt at cheese making as yet. Take a country so eminently fitted as this for the dairy business, with pure water abundant, a present home market for the whole product, and a constantly increasing demand, no danger but thrifty dairymen will find profitable employment and pleasant homes.

The statements often made that stock does not require shelter during any part of the winter, is incorrect and likely to deceive the distant reader. We have South and South-West winds prevailing in winter, that bring long and continued pelting rains, and sometimes, for a short time, snow. During these storms all domestic animals should be housed and fed. Sometimes rain will fall for several days and nights in succession, and then clear weather will follow, while at times, although the sky is hid with clouds for many days, no rain falls.

Fog does not prevail to any great extent. In this high latitude of course the days are short in winter and correspondingly long in summer. It is half-past seven in winter before it is light enough for out-of-door work, and dark by half-past four; while in summer one can see well by a little after three o'clock in the morning, and yet catch the rays of twilight after nine o'clock. These, of course, are the extremes, and the intermediate days between the summer and winter solstices are of nearer equal length.

Again, it is a mistake to class a part of the year as the dry season. This country seldom, if ever, suffers from drought. True we have not the heavy rains of winter, but copious and refreshing showers are common during our summer months, I think as much so as central Indiana or Ohio. This last is that which we prize most highly. The discouraged husbandman from the parched plains of California, upon arriving within our borders, is amazed to see the fresh, green grass of our bottoms and the luxurient growth of everything planted, recollecting the scorching heats and droughts that he had left behind him, and but a few days sail distant. This is simply a record of facts; had we space it would be interesting to trace out the cause, yet the truth would nevertheless remain the same, and so we pass on to notice the peculiarity of our summer seasons.

By referring to the tables found on another page, we find that the average temperature of the three summer months is a fraction over 63°, Farenheit, sufficient to mature the earliest kinds of corn, to produce potatoes to perfection, and with them all kinds of root crops usually raised for man or beast. The nights are always cool, so much so that the more tender vines do not thrive well unless they receive extra care. I have seen forty bushels of corn raised to the acre, and tomatoes matured in the open garden in great abundance. These cool nights of course precludes the raising of grapes or the peach, like California or New Jersey, yet even these are raised of tolerably fair quality in sheltered locations. The apple, pear, plum and cherry are at home here, bear regularly and heavy crops, and of the best quality. We can, in

the course of time, find a market for the surplus of apples in the countries to the South of us, in consequence of the high flavor and excellence, as compared with the productions of a hotter climate. Trees come into bearing at a much earlier age than in the Eastern or Middle States, but are shorter lived and decay early. The apple will usually bear at four years old from the graft, but the body of the tree often becomes diseased. Not so with the pear; although it bears early there is seldom an unsound pear tree found, and the same may be said of the plumb and cherry. Following upon these, comes the small fruit of every description—the straw-berry, goose-berry, currant, rasp-berry and black-berry, that are produced in the greatest abundance and of most excellent quality. The varieties of wild berries are numerous, and are produced in succession and in great abundance, but nothing so large as the wild plum is found in our forests. The most valuable wild fruit found is the cranberry, which enters largely into commerce, and is destined eventually to build up a thriving business, as there are many places suitable for its production, and always a brisk market for shipment down the coast and for home consumption. Wheat, oats, barley and rye all mature well and produce abundant crops. I have known fifty bushels of wheat and eighty of oats having been raised to the acre. The average of our wheat, however, will not exceed twenty-five bushels per acre for our bottom lands, and eleven for the upland gravelly prairies. It is of most excellent quality, being pronounced by our millers second to none on the continent, yet we do not raise a sufficiency for home consumption, because other and more profitable crops have engaged the attention of our farmers.

The soil of our river bottoms is usually made up of a sandy clay loam, in some places sand predominating, at others, clay, but all of it quick and fertile. It has all been formed by the wash from the mountain side, and bears the character of the material found there, yet it varies in consequence of the different circumstances under which the deposit was made; that which was formed under a rapid current, of course, not being so rich in sediment and fertile matereial. A rank growth of vegetation then sprung up over the whole surface, and decayed, and in turn was covered in by new deposits, and so alternating for centuries, until the whole, for an indefinite depth, is made up of this abraded material of the mountain side, intermingled with vegetable mould, the whole, loose and friable, and easily penetrated by the roots of growing crops, and of course not so liable to suffer from dry weather, as where a solid subsoil is encountered. This land is not entirely free from overflow. Parts of every valley have not been known to overflow within the memory of the oldest inhabitants, say for twenty years, while other parts are only inundated at intervals of several years, when an unusual high water prevails, and that only during our winter freshets, while again another and an inconsiderable portion is annually submerged in winter, and sometimes in summer from the rise caused by the melting snow, and is totally unfit for anything but pasture. Generally upon a quarter section of land, a part of each kind of land described is found in proportions differing of course with each particular location. In another chapter will be found an estimation of the amount of this character of soil in each county, much of which is unoccupied and awaiting the advent of the immigrant to enter upon and claim by

right of the homestead and pre-emption laws. It is not claimed that this estimate is perfectly accurate, as it is merely based upon the judgment of citizens residing in the vicinity, who are often honestly deceived, and from the fact that a part is not even fully explored, yet I have made due allowance and think it is not overstated.

TIMBER.

The value of any commodity lies in the demand as well as in its availibility, yet it is often the case that the facility for obtaining cheaply, increases the consumption far beyond what it would be be were the article scarce and costly. Such is the case with our lumber products. Although the imperative demand is great, yet we find increased sale in consequence of being able to furnish at so low a price. Already the lumber product of the Sound region alone amounts to full one hundred and eighty million feet per annum, which can be increased from year to year as the wants of commerce demand. We have seen by actual measurement that the shore line of the Sound is nearly sixteen hundred nautical miles, and although much of this is not available for logging in consequence of heavy fires having burned the more valuable timber, in some places, and in others, the growth not being suitable for lumber, yet loggers scarcely ever haul more than half a mile. To say that the timber is excellent and that enormous quantities are obtained to the acre, would not convey to parties East of the Rocky Mountains, an adequate conception of either the quality or its extent. There are cases where two hundred thousand have been taken from an acre, and trees three huudred feet long are not uncommon.

The logs are hauled upon skided roads By stripping the bark from the logs and oiling the skids, a team will take to the roll-way at one time several logs fastened together. Oftentimes, after the logs are fairly on the road, one driver will take three or four yoke of oxen to the landing, each yoke with a separate load.

The consequence is that logs are furnished to the mills at $4 50 per M., and at a profit to the loggers, employing but few hands comparatively for the amount of timber supplied. With a constantly increasing demand and a continued searching out of the most available bodies of timber, the time is not far distant when the price will advance and the better and more remote from the water will be drawn upon to supply the deficiency. This change will not enhance the price of lumber so much as to materially check the consumption, but it will be an era of increased prosperity among the farmers and laboring men. Then our rivers emptying into the Sound and coursing for a great part of their length through vast bodies of timber, will be called upon to float the growth of centuries through their channels down to the level of the salt waters, adding near one thousand miles more to our already extended shore line upon which timber can be delivered to the water.

The timber on the foot-hills adjacent to these rivers is superior to much that is found near the Sound, and in quantities far more extensive, so that we need have no fear that it will ever be exhausted, as there is a continued growth in localities not disturbed by fire or otherwise, that will assist eventually to keep up the supply. Yet, aside from this, there

are many unexplored ravines and gently sloping hill-sides where chutes will be constructed, and the force of gravitation made to propel the log to the waters connected with the Sound, and within the reach of the manufacturer.

Already the foreign trade is great, supplying all quarters of this coast, the islands of the Pacific, Japan and China, and even European countries. Ships now come to us principally in ballast, but with the North Pacific Railroad completed, this will not continue long, as they will bear the freight of commerce, for the great interior, as well as that in transit to the Atlantic sea board and to Europe.

The yellow fir is the most abundant, and that which is most used for lumber and spars. It is both strong and durable, and much used for ship building. It is a tree peculiar to the North-West coast, and is not found East of the Cascade Mountains, South of the 49th parallel, and no further South than the 42d parallel of North latitude.

Besides the fir, we have the cedar, hemlock, spruce, maple, balm, ash and alder, in estimated quantity and value in the order named. The maple, balm, ash and alder are confined almost exclusively to the river bottoms. Upon the lower Columbia and in isolated districts of the Sound, there are bodies of the white fir, and in rare cases, of pine. There is also quite extensive oak openings near the head of the Sound, and extending far South towards the Columbia, but the timber is scrubby and only second rate in quality.

Although water power is abundant, yet steam is the power commonly used, as a site suitable for shipping lumber is of more consequence than the cost of the machinery. Hence, nine-tenths of the lumber is manufactured by steam power, and many vacant harbors await the action of capitalists and the demands of trade upon which to found large manufacturing establishments and thriving villages; and such are yearly being added to the number already here.

The following is a list of the principal lumbering establishments and their location

S. L. Mastick & Co., Port Discovery; Port Ludlow Mill Co., Port Ludlow; Puget Mill Co., Port Gamble; Adams, Blinn & Co., Seabeck; Meigs & Gawley, Port Madison; S. E. & T. Smith & Co., Port Blakely; Grennan & Cranney, Utsalady; H. L. Yesler, Seattle; Hanson, Ackerson & Co., Tacoma; Williams & Co., Freeport; P. Keach, Nisqually Landing; Ward and Mitchell, Tumwater; P. P. & Light, North Bay; Columbia River Manufacturing Co., Knappen; Abernethy & Co., Oak Point.

The export of lumber, foreign and coastwise, for the year ending June 30th, 1870, has been fully one hundred and eighty millions. The capacity of these mills during the same period, if run on full time, is three hundred and twelve million feet.

In addition to those enumerated, there are numerous smaller mills run by water power, that supply the local demands of each settlement. There are about twenty of these now running, with numerous water-privileges not even yet occupied, that can be improved as the wants of the settlers demand it.

FISHERIES.

It is conceded by all parties competent to judge, who have reviewed the whole ground, that the fishing interest of the North-West coast, will eventually centre in Puget Sound.

The whaling vessels of the Pacific in former years resorted to the Sandwich Islands, and at a later date to San Francisco, for supplies, transfer of cargo, etc. Puget Sound is many days' sail nearer the whaling grounds than San Francisco, has a more capacious and safe harbor, and can now furnish the appliances for repairs and supplies for outfit as cheap as any other point on the coast. The day that the North Pacific railroad is completed will open a new source of trade for the Sound, by attracting the whaling fleet of the North Pacific waters to this harbor.

The cod fisheries are destined to build up a very important commercial interest, employing a great number of men and a large investment of capital. While the fishing grounds lie far to the North of the Sound, the climate and location forbid the extensive curing of fish North of the 49th parallel of latitude, or very far South of the 46th. In consequence of the first on United States soil being too far removed from supplies, and the climate too moist, while the latter locality is too hot to cure properly without injnry to the fish, unless extra pains are bestowed upon them to shelter them from the scorching rays of a Southern sun.

San Francisco is seven hundred miles further removed from the fishing grounds than Puget Sound. The equable temperature of this region eminently fits it as a curing station, and with these advantages are the great facilities of the numerous bays and inlets of the Sound, with a beautiful, clean beach upon which to land the fish, and where flakes can be erected at any convenient distance from the beach, upon which to cure the fish. Added to these advantages is the fact that fishing schooners can be built or repaired on the Sound as cheaply as in any part of the United States. Supplies of all kinds are cheap and abundant, brought here at a nominal freight by vessels coming from all quarters of the globe for lumber or spars, or raised upon the alluvial river bottom lands adjacent to the Sound.

Two trips a year can be made from this harbor, while but one is usually made by the Eastern fishermen. This difference is mainly in consequence of the climate. While the fishing grounds of the Eastern coast are perilous even in summer, in consequence of prevailings fogs, lying, as the fishing vessels do, in the track of the great sea-going vessels plying between the Atlantic sea-board and Europe, that of the North-West is comparatively free from these dangers, and have the additional advantage of a mild climate, even in winter, never encountering ice or obstructions of that character, either in winter or summer.

Meager statistics are at hand showing the extent of cod fishing already on the North-West coast. In 1869, "nineteen vessels sailed from San Francisco in March and April of that year, for the Ochotsk and the Choumagin Islands The first of the fleet returned on the 21st

of July with 45,000 fish; the remaining eighteen reached port at subsequent dates, the last being as late as November 6th.

"The smallest catch was 13,000; the largest, 115,000; the whole aggregating 1,055,500 fish. Allowing one thousand fish to the ton, there were 1,055½ tons, or 2,111,000 pounds," or an average catch of over 55,000 fish to each vessel.

Some of the finest cod that has ever been caught on the Pacific coast have been secured this season by schooners owned on the Sound, and long since returned to cure their fish. The number of fish taken in 1870 will far exceed that of last year, judging from the reports of vessels already returned. Other vessels are now building, and still others, no doubt, will be undertaken as the advantages become better known.

Although salmon are abundant in the Sound, yet they are not so easily taken or of so uniform good quality as those taken near the mouth of the Columbia from April till July of each year. There is probably no better quality of fish on the continent, or better facilities for taking them with certainty and in large numbers, than exists in the Columbia for a distance of fifty miles, along the river from the mouth.

The tide rushing in over the bar and into the wide roadstead or bay, struggles with the contending current of the Columbia, and sinks as the tide recedes and allows the lighter waters of the river to rush over the surface and out to sea, to be again crowded up the river at the next flood tide, and so on, leaving brackish or salt water at the bottom and perfectly fresh at the surface. Into this channel the variety of salmon known as the "Chinook," come in countless numbers, and are taken, but a few hours removed from salt water.

Where the main fisheries are located, the river is one and a quarter miles in width, either one shore or the other running off shoal. Gill nets, twelve hundred feet long are floated down the river, in some places for miles, without encountering any obstructions. Two men with their boat and net will average their twelve hundred pounds in one night. These fish can only be taken in the night, when the water is clear. As the channel is deep and the river wide, it is thought impossible to cut short the supply, as millions pass up the river despite the utmost viligance of the fishermen.

Five establishments have canned about 1,800,000 pounds during the season of 1870, besides over four thousand barrels by other parties. Those in cans nett about fourteen cents per pound; in barrels about five cents per pound. The canned fish are shipped to nearly all parts of the commercial world, and realize a handsome income to the parties interested.

The fish which ascend the Columbia during the months of April, May, June and July, are of different quality from those which ascend at a later season, not the Columbia alone, but all the streams emptying into salt water. Some varieties of these late fish are entirely worthless while other specimens are comparatively good.

In the first run are found some fine specimens weighing seventy pounds, and averaging for the season, as high as sixteen pounds. Of the variety caught later in the season, sixteen pounds is considered very large, and the average will not exceed five.

The Northern waters on the Alaska coast are literally alive with the very best of salmon, even larger than those of the Columbia.

Shoalwater Bay furnishes large quantities of oysters for the Pacific coast trade. There were sixty thousand baskets shipped from the bay during the season of 1869, at one dollar per basket. It is estimated that seventy thousand baskets will be required to supply the demand for 1870. There are about one hundred and fifty men engaged in this business, employing several schooners in the trade connected with it. Clams are found in great abundance on the Sound. The oysters of the Sound are small and confined to isolated districts. Recently parties have undertaken to transfer them to new localities. Time, no doubt, will develope good oyster beds in the waters of the Sound.

The halibut is next in importance to the salmon. These fish abound in the Straits and far up into the Sound, to the North, inside the islands, and on the far-off banks of the North-West coast. Recently parties have undertaken to introduce these fish in the Southern markets fresh, by packing in pounded ice. No statistics are at hand respecting the success of this undertaking. Other means can be adopted if those already tried fail. It is known that where so fine fish as the halibut are so abundant as they are found in our Northern waters, that means will be adopted to get them into the markets of the world. Latterly these fish have been salted lightly and smoked, and in that way preserved. The time will be, when large canning establishments, similar to those engaged in putting up salmon, will prepare the halibut for the markets of the world, and a large commercial interest now lying dormant brought into life.

Thirty thousand fishermen or more have found profitable employment on our North-Eastern coast, while our population was less than thirty millions. Upon the completion of the North Pacific Railroad fish will be sent far into the interior, to supply the wants of an ever-increasing population. For the present, the demands of the market will regulate the number to engage in the business. It is known that many thousands might be engaged, with reasonable prospects of success. True, prices will not rule high, neither should they, as we need cheap food with which to feed our ship-builders and manufacturers.

Puget Sound will be the great centre where the fisherman will draw their supplies, receive their pay, and from whence the fish will be distributed to the commercial marts of the world. The ship-building interest co-incident to this trade, will employ large numbers of men, and each will draw upon the agricultural and manufacturing interests, taxing them to their utmost capacity, and furnishing a market second to none on the continent, and certain in the no distant future to build up a numerous, prosperous and wealthy community.

NORTH PACIFIC RAILROAD.

The charter of this company require of them to build and equip a first class railroad from Lake Superior to Puget Sound, and that they must construct one hundred miles each year after July, 1870, and complete the whole by the 4th day of July, 1877.

Puget Sound is defined in an amendment to the charter as comprising all the tide waters connected with the Straits of Fuca, South of the 49th parallel of latitude in the United States territory. A land subsidy of twenty alternate sections of odd numbers, on each side of the road in the territories, and ten in the states through which the road will pass, with the right to go twenty miles beyond these limits on each side of the road to make up any deficiency of lands taken up by actual settlers prior to the location of the road, is granted by Congress.

This grant will cover an area of about 93,000 square miles, or *sixty millions of acres*. It is estimated of value sufficient not only to build and equip the road entire from Lake Superior to Puget Sound, but will leave a surplus sufficient to "fit out an entire fleet for the China, East India and coasting trade, of sailing vessels and steamers, and leave a surplus of millions."

The advantages of this route are that it will run nearly its whole length through a rich agricultural region of far less elevation above the sea than any other road across the continent, and will be shorter by nearly 400 miles from ocean to ocean than the Central and Union Pacific, and 1,600 miles nearer from New York to Shanghai, *via* Puget Sound, than San Francisco.

The subjoined tables will exhibit the comparative distance and altitude of the two competing routes:

ALTITUDE OF THE NORTH PACIFIC ROUTE:

From Duluth, on Lake Superior, to Dakota Valley, 300 miles,	1200 feet.
To Yellow Stone River, 300 miles	2200 "
Along the Yellow Stone 400 miles	2500 "
To Flat-head Valley, 300 miles	3500 "
To Lewis or Snake River, 200 miles	3000 "
To Puget Sound, 500 miles	400 "
From Lake Superior to Puget Sound, 2,000 miles.	

ALTITUDE OF THE UNION AND CENTRAL PACIFIC ROUTES:

From Chicago to Omaha, 500 miles	1000 feet.
To New Cheyenne, 500 miles	3300 "
To Cooper's, 100 miles	7300 "
To Promontory Point, 485 miles	6200 "
To Humboldt, 406 miles	4750 "
To Reno, 130 miles	4000 "
To Auburn, 118 miles	4400 "
To Sacramento, 36 miles	300 "
To San Francisco, 100 miles	50 "
From Chicago to San Francisco, 2,375 miles.	

NOTE.—Engineers allow one mile additional running time for every fifty-two feet of rise and fall.

The highest point on the Central Pacific is 8,235 feet, while that of the Northern Pacific is 4,950.

Governor Stevens, in his report on the North Pacific Railroad, says that "along the coast the prevailing sea breezes from the South-West in winter, and the North-West winds in summer, so modify the climate that the isothermal line runs nearly parallel to the coast, and making

the climate of Puget Sound nearly as mild, and in summer more agreeable than in San Francisco, while it corresponds closely with that of the Western coast of Europe in the same latitude, and especially that of the British Island. The effect of this amelioration from the prevalence of the South-West sea breeze is felt in winter, as has been here shown, as far East as Fort Union, on the Missouri, and has a constantly apparent effect on all the country East to Fort Benton."

One thousand feet of elevation will cause a fall of temperature equal to three degrees, and taking into consideration the difference of the altitude of the two routes, it would more than compensate for the difference of latitude, aside from the climatic influences mentioned by Governor Stevens' report.

The North Pacific Railroad company by their charter are required to use American iron in the construction of their road. The grading of two hundred and forty miles, from Duluth, on Lake Superior, has been let, and a large force are at work. The company has already taken the initiatory steps to establish large iron works near its Eastern terminus, to supply the iron with which to build that portion of the road. Four surveying parties, of twenty persons each, are in the field, diligently searching out the best route from the Sound.

That branch from the Sound to the Columbia River will no doubt be completed during the summer of 1871, which will enable the company to bring the rich iron ores of the Columbia, and the limestone and coal of the Sound together, with which to commence the manufacture of iron for the Western portion of the road.

The following statements of comparative distances is taken from a pamphlet issued by Jay Cooke & Co., entitled "the Northern Pacific Railroad's land grant:"

"The Northern Pacific road will be the shortest and therefore fastest and cheapest route of commerce and travel between Asia and Europe. The comparative distances between London, New York, Philadelphia and Baltimore, and Shanghai, in China, and Hakodadi, in Japan, by the two routes, the San Francisco and Puget Sound, are as follows:

DISTANCES.

	Statute Miles.
London to Shanghai, via. Mediterranean and Red Sea	11,800
" to Yeddo " " " "	13,000
" to New York	3,620
Chicago to San Francisco via. Union Pacific R. R.	2,423
" to Puget Sound (Seattle) Northern Pacific R. R.	2,140
New York to San Francisco via. Chicago	3,323
" to Puget Sound " " and Northern Pacific R. R.	3,040
Philadelphia to San Francisco via. Chicago and Union Pacific R. R.	3,243
" to Puget Sound, " " and Northern Pacific R. R.	2,960
Baltimore to San Francisco " St. Louis and Union Pacific R. R.	3,200
" to Puget Sound " Chicago and Northern Pacific R. R.	2,977
San Francisco to Shanghai " Sandwich Islands	7,860
" to " " Midway Islands	7,100
" to Hakodadi, direct route	4,800
Puget Sound to Shanghai, via. Alaska Peninsula	5,716
" to Hakodadi, " " "	4,400
New York to Shanghai via. Chicago, San Francisco and Midway Island	10,423
" to " " " Northern P. R. R. and Puget Sound.	8,756
Philadelphia to " " " San Francisco and Midway Island	10,343
" to " " " Northern P. R R. and Puget Sound.	8,675
Baltimore to " " St. Louis, U. P.R. R., S. Francis. & Mid. Is.	10,390
" to " " Chicago, Northern P. R. R., and Puget Sound.	8,668

To the question "will the road be built?" we can give an emphatic affirmative answer, and that too, in time to afford an opportunity to celebrate the great centennial anniversary of the National Birth-day, upon the summit of the broken down range of the Rocky Mountains, amid settlements far up on the mountain sides, if not to the very summit.

COAL.

Since the comparatively recent enormous growth of steam marine, the attention of all commercial nations has been more particularly directed to deposits of coal convenient to the ocean, than in former years. The question of a full supply of cheap coal, and of good quality, is one of more than ordinary importance to Puget Sound, considering the contest certain to arise for the carrying trade of the East, upon the completion of the North Pacific Railroad. The freight from China and Japan is of such a nature that speed is the great consideration. The line of railroad across the continent will be shorter and the distance less to important ports of China and Japan, yet without coal to generate steam, Puget Sound might fail in her laudable aspirations to grasp this great trade in the no distant future.

Coal is known to exist at short intervals from the Columbia River near Monticello, to Bellingham Bay, near our Northern boundary, a distance of two hundred miles. These outcroppings are found in veins from two to sixteen feet in thickness, and vary considerable in their quality so far as examined, yet no Fair test has been given except perhaps that at Bellingham Bay, and at the Lake Washington field, near Seattle.

To particularize, it is found within a mile of the Cowlitz river, some four miles from Monticello; then, again, near Claquato, on the Chehalis, thirty-five miles from the first; then on the Skookum Chuck, and at short intervals to within fifteen miles of Olympia; next, on the Puyallup, East of Commencement bay; on Green river, to the North of the last named; then the Lake Washington field, seven miles East of Seattle; and again fifteen miles to the East and not three miles distant from the famous Snoqualmie falls; and so on through to the 49th parallel. That found on the West side of the Sound, is in seams not so thick as those named, yet of excellent quality. When it is known that this country is comparatively yet unexplored, much of it unsurveyed, and all sparsely settled, it is fair to presume that other discoveries will be made, and that in all probability the strata underlies the whole country. That at Bellingham Bay is already worked 800 feet under the waters of the Sound.

Twenty-five thousand tons of coal were shipped from the Bellingham Bay mine during the year 1869. The mine had been on fire and was flooded to extinguish the fire, which closed it for three months of that year. One hundred thousand tons per annum can now be taken from this mine and delivered to vessels. The bunkers recently erected, together with the wharf, will easily clean 500 tons of coal per day. They are of 4,000 tons capacity, and capable of delivering 1,000 tons per day to vessels. Three vessels can load at the same time and at a cost of about $3 per ton.

The test for the caloric value of this coal, taking the average of four samples of Newcastle coals, that of these, one pound would elevate 66.63 pounds of water from 38° to 212°, Farenheit. While one pound of this coal would affect the same change on 59.90, while the average specific gravity of Newcastle coal was 1.26; that from the Bellingham Bay mine was 1.31; from the Lake Washington field 1.18. This last is described as being "nearly as hard as anthracite, burns with a clear flame, does not emit the black smoke so common to other coals on the coast, and so far as tried it is pronounced superior for purposes of steam. * * * It burns up thoroughly, making no clinker, and leaving a very small proportion of ashes."

The confidence of capitalists in the quality of the coal found here is best illustrated by an account of the action taken towards developing the mine:

"The Seattle Coal Company have just let a contract for three years for bringing coal from their mine to Lake Washington, over the new tramway, which is about three miles in length. Heretofore the coal has been brought by wagons, and then shipped in scows by lake and river some twenty-five miles to Seattle. But a more expeditious plan is henceforth te be pursued. Steamboats are to run across lakes Washington and Union, transporting the coal to within a mile and a half of this place (Seattle). Over this last distance another tramway is to be forthwith laid down, and parties are now busy cutting the ties, opening the road, and preparing everything for the speedy and constant shipment of coal over this route. A warehouse is to be erected at its terminus on the bay, where coal can be taken in safety and forwarded to San Francisco and elsewhere as fast as needed. The portage between lakes Washington and Union, a distance of about a quarter of a mile, will be passed over by boats on cars, so constructed as to require no handling of the coal; it will be carried in the same vessels in which it is received from the chute on the East side of Lake Washington, all the way until its delivery at Seattle. The company of contractors who transport the coal, and build the tramroad and boats for this latter distance, have bargained to be ready for work by the first of October next. The probability is that they will be ready early in September Their contract runs for six years, and they are to bring any amount that the markets of the world may demand."

Considering the fact that the quality of coal in Washington Territory is far superior to any found on the Southern coast, and that it exists in such great abundance and over so wide spread district that it is not to be wondered at that a recent disinterested writer, upon examination of our coal fields, said that "nature had made Washington Territory the Pennsylvania of the Pacific."

HEALTH.

The tables of mortality given in the United States census reports, exhibits a marked range of per centage. In 1850 the ratio of deaths to population were: In Alabama, 1 in 84; District of Columbia, 1 in 61; Indiana, 1 in 77; Kentucky, 1 in 65; New York, 1 in 68; Ver-

mont, 1 in 100; Massachusetts, 1 in 51; California, 1 in 99; Minnesota Territory, 1 in 204; Oregon Territory, 1 in 285. In 1860, the deaths in Arkansas were at the rate of one person out of every forty-eight; Massachusetts and Louisiana, 1 in 57; Illinois and Indiana, 1 in 87; Kansas, 1 in 68; Vermont, 1 in 92; California, 1 in 101; Oregon, 1 in 172; Washington Territory, 1 in 228. Again, from the Surgeon General's army report it is shown that the ratio of deaths from fever was: In New England, 1 in 283; Harbor of New York, 1 in 66; the Great Lakes, 1 in 159; Jefferson barracks and St. Louis Arsenal, 1 in 113; Texas Southern frontier, 1 in 67; Texas Western frontier, 1 in 529; Oregon and Washington Territory, 1 in 529.

The very favorable showing contained in the census reports, is in part accounted for by the difference of the thoroughness of the work in taking the census of different localities, yet we look forward with confidence to the forthcoming census, to bear out the assertion, that no other state or territory will compare with Washington Territory in health and longevity. The report of the Surgeon General is less liable to error, yet exhibits in a more marked degree the proportionate deaths from fever; while that of the five districts named averaged one in one hundred and thirty-seven, that of Washington Territory was one in five hundred and twenty-nine.

There are no malarial districts to generate fevers, and cases of fever and ague are unknown. The nights are always cool and refreshing, the days seldom hot, and the temperature equable throughout the year. There are no diseases peculiar to this country, and fatal epidemics are unknown. No case of hydrophobia has ever been reported. Of poisonous reptiles there are none. The snakes are perfectly harmless throughout this region. In a word, life and person are as free from casualties common to the human family, as in any part of the United States.

ROUTES.

Several ways are open to those desiring to come to the Territory, prominent among which is by sail vessels, coming to the Sound from San Francisco for return cargoes of lumber. For the emigrant with his family, this, although rather more tedious, is by far the best route to choose. Another route much used is by steamer, to Portland, and thence overland to the Sound. The first mentioned route is much less tiresome, does not cost so much, is just as safe, and with this advantage, that one's goods and chattels can be kept with them, and ready for use upon arrival. It is probably not desirable or necessary to bring much freight, as everything needed for house-keeping and comfort can be purchased here upon reasonable terms, yet any article of value that will bear transporting to San Francisco, can be speedily and safely transferred to Puget Sound and at the very moderate cost of five dollars per ton, to any of the milling ports, and from thence to any part of the Sound by semi-weekly steamers touching at all points of importance, at an additional cost of two dollars per ton.

The cost of passage, by sail, from San Francisco to the Sound, is twenty-five dollars in coin, and occupies about twelve days in winter

and twenty in Summer. A person landed at one of the numerous large lumbering establishments, is within easy reach of employment. if he desires it, and not far removed from government land, in the river bottoms and on the tide flats adjacent to the Sound.

Another route open to travel is *via.* the mouth of the Columbia River to Astoria or Portland, Oregon, thence by the river to Monticello on the right bank of the Columbia, and from this last point eighty-five miles overland to the Sound. This route offers the inducement of speed, as well as the opportunity of examining a far larger scope of the country, and by those unincumbered with families would probably be preferred.

The fare from San Francisco to Olympia, *via.* Portland, by steamer, payable in coin, is: from San Francisco to Portland, coin, $36; steerage, $20 50; thence to Monticello, $1 50; thence by stage to Olympia, $8 00. Total, cabin passage, $45 50; steerage, $30 00; time, six days. Or, from Portland the traveler can take the ocean steamer running to the Sound *via.* the mouth of the Columbia, and usually going no further than Seattle. The fare on this route is: from Portland to Seattle, or points below, $25 00; freight, per ton, $7 00; time, three days. This steamer makes a trip about every ten days.

The most important routes of travel in the Territory runs North and South about midway from the summit of the Cascade Mountains, to the East, and the Coast Range, bordering on the Pacific Ocean, on the West. From Monticello, near the Columbia River, to Olympia, on the Sound, it is sixty-six miles, overland, on an air line; from thence to the Northern boundary, one hundred and thirty-five miles. By the usual traveled route it is much further.

FROM OLYMPIA SOUTH BY STAGE ROAD:

To the first crossing of the Chehalis	30 miles.
" Claquato, and second crossing of the Chehalis	7 "
" McDonald's, (stage station.)	12 "
" Pumphry's Landing, on the Cowlitz, (stage station,)	14 "
" Jackson's, on Arkansas creek, (stage station.)	10 "
" Monticello, on the Cowlitz, and near the mouth of this river	12 "
From Olympia to Monticello	85 "

The first thirty miles is over alternate prairie and timber—soil gravelly and sandy, and the road good. The balance is a clay region, muddy in winter and rough all the time. Stage time: leave Olympia at 2 o'clock P. M., and reach Monticello next day at 9 A. M.; rest at Pumphry's seven hours. A daily mail is carried by stage over this route.

FROM MONTICELLO BY DAILY STEAMERS:

To the Columbia River	2 miles.
" Vancouver, up river	41 "
" Cascades	42 "
From Monticello to the Cascades	85 "

FROM MONTICELLO DOWN THE RIVER BY TRI-WEEKLY STEAMERS:

To Oak Point	20 miles.
" Cathlamet	12 "
" Pacific City, near the mouth of the Columbia	40 "
From Monticello to Pacific City	72 "

The daily steamers from Monticello up the river reach Portland, Oregon, in eight hours; distance, 50 miles.

The tri-weekly steamers reach Astoria, Oregon, and near the mouth of the Columbia, in six hours; distance, 60 miles.

These steamers run as an accommodation line, touching at all points on either bank of the river where local business offers, thus extending the time for through travel.

FROM OLYMPIA NORTH BY SEMI WEEKLY STEAMERS:

To Steilacoom	24	miles.
" Tacoma	17	"
" Seattle	31	"
" Port Madison	12	"
" Port Gamble	10	"
" Port Ludlow	11	"
" Port Townsend	17	"
" Victoria, B. C.	50	"
From Olympia to Victoria	182	"

The time occupied in running from Olympia to Victoria is twenty-two hours.

FROM OLYMPIA NORTH, OVERLAND:

To Steilacoom	22	miles.
" Franklin, on the Puyallup	16	"
" first crossing of Stuck	2	"
" second " "	5	"
" Slaughter Post Office	4	"
" the crossing of White River	3	"
" White River Post Office	2	"
" the crossing of Black River	10	"
" Seattle	12	"
From Olympia to Seattle	76	"

FROM OLYMPIA WEST, OVERLAND:

To settlements near the Lower Chehalis	35	"
" Satsop Creek, (tide water,)	6	"
" Wynootche Creek, (tide water,)	8	"
" the mouth of the Chehalis and Gray's Harbor	13	"
From Olympia to the mouth of the Chehalis	60	"

From Steilacoom East, *via.* Nah-chess Pass, to Wallula or Old Fort Walla Walla, East of the Cascade Mountains, it is 225 miles. This road, was opened through the mountains for wagons in 1853, by an emigrant train and citizens. In 1854 the government spent $20,000 on it as a military road, and a large number of emigrants came over it that year with their wagons. Subsequently this route has become blocked up with timber, and only used as a pack trail or for loose animals.

FROM SEATTLE EASTWARD, VIA. SNOQUALMIE PASS:

To Clymer's Post Office, on Black River	11	miles.
" Squak	9	"
" Snoqualmie River	18	"
" " summit	23	"
" Lake Kitchelas	5	"
" Thorp's	24	"
" Umatilla City	110	"
From Seattle to Umatilla City	200	"

This road is open for wagons across the Cascade Mountains to the prairie. Within the last five years seven thousand dollars has been expended on it by the Territory and King county, together with private subscriptions. King county is now expending $1,500 more this present season.

MAIL ROUTES.

From Olympia to Steilacoom city, 25 miles, and back, three times a week, by stage.

From Olympia, by Arcadia and Oakland, to Skokomish, 36 miles, and back, once a week, in boats.

From Olympia, by Cedarville, Elma, Montezano, Hoquim, Chehalis Point, Bruceport, Fort Willopa, Oysterville and Unity, to Asoria, Or., 178 miles, and back, once a week.

From Olympia to Yelm, 23 miles, and back, once a week, horseback.

From Olympia by Tumwater, Coal Bank, Grand Mound, Skookum Chuck, Claquato, Grand Prairie, Castle Rock and Freeport, to Monticello, and back, six times a week, by stage, 85 miles.

From Olympia by Steilacoom city, Seattle, Port Madison, Port Gamble, Port Ludlow, Port Townsend and Port Angeles, to Victoria, B C, 200 miles, and back, twice a week, in steamers.

From Claquato to Boisfort, 10 miles and back, once a week, horseback.

From Port Townsend to Port Discovery, seven miles, and back, once a week, by stage.

From Skookum Chuck by Saunders' Prairie and Cowlitz, to Grand Prairie, 30 miles, and back, once a week, horseback.

From Steilacoom city to Franklin, 16½ miles, and back, once a week, horseback.

From Vancouver, by Cathlapoodle, Union Ridge, Lincoln and Pekin, to Freeport, 64 miles, and back, once a week.

From Seattle, by Mukilteo, Tulalip, Snohomish, Coupville, Swinomish, Utsalady and Skagit river, to Whatcom, 165 miles, and back, once a week, in steamers.

From Seattle, by Freeport and Port Blakely, to Port Orchard, 30 miles, and back, once a week, by steamers.

From Seattle, by White River and Slaughter, to Franklin, 38½ miles, and back, once a week, horseback.

LANDS AND LAND TITLES.

Land has ruled low, population being sparse, and land to be had simply by residing upon it. There is no controversy respecting titles except, perhaps, in a small district formerly claimed by the Hudson's Bay Company, or, as they style themselves, Puget Sound Agricultural Company. The United States Government having purchased all the rights of the company in the United States, has settled that question, and are this present season surveying the land, and hence it may be fairly stated that there are no disturbing elements respecting land titles in the Territory.

The early settlers, prior to the year 1854, obtained their title under the operation of the donation law, giving at first 640 acres, and later

320 acres, to heads of families, and half that quantity to single persons. Comparatively few claims were taken under the first provision, and hence half and quarter section claims are the rule in settled portions of the Territory. The titles to these claims are safe and subject to private sale at prices ranging from three to twenty dollars per acre, according to the quality of the soil, the location and the improvements made. In addition to this, all the land surveyed prior to 1860-61 has been "offered," and hence is now subject to private entry.

"There are two classes of public lands; the one class at $1 25 per acre, which is designated as *minimum*, and the other at $2 50 per acre, double *minimum*. Where every alternate section of odd numbers is granted to a railroad, the balance is held as *double minimum*." Title may be acquired by purchase, at public sale, or by ordinary private entry, and by virtue of the pre-emption and homestead laws.

Since the passage of the homestead law in 1862, there has been no land offered at public sale, and hence all the land surveyed since that date has been left for the actual settler under the homestead and pre-emption laws.

Homestead claims can be taken on surveyed land to the extent of one hundred and sixty acres on *minimum* and eighty acres on double *minimum* by paying the office fees, amounting to $22 00.

By a recent act of Congress, soldiers having served three months in the army and having an honorable discharge, are entitled to one hundred and sixty acres under the homestead law, on *double minimum*, or alternate reserved sections.

"Pre-emptions to the extent of one quarter section may be made under the general pre-emption laws upon 'offered' and 'unoffered' land; in certain cases, including Washington Territory, "may have legal inception by actual settlement upon unsurveyed land, although in such cases no definite proceedings can be had as to the completion of title until after the surveys are officially returned to the district land office."

"The act of March 3, 1853, extends the pre-emption for one quarter, or one hundred and sixty acres at $2 50 per acre to every 'alternate' United States or reserved section along the line of railroads."

The second section of the act of July 14, 1870, requires that "all claimants of pre-emption rights shall hereafter, when no shorter period of time is now prescribed by law, make the proper proof and payment for land claimed, within eighteen months after the date prescribed for filing their declaratory notices shall have expired: *Provided*, That where said date shall have elapsed before the passage of this act, said pre-emptor shall have one year after the passage hereof, in which to make such proof and payment."

"This act leaves the provisions of law as heretofore respecting '*offered lands*' *viz:* filing within *thirty days*, and payment within *twelve months after settlement*." Upon surveyed unoffered land, filing within three months and payment within *twenty-one months after settlement*.

There are two land offices West of the mountains, one at Olympia, on the Sound, and one at Vancouver, on the right bank of the Columbia River.

The final location of the North Pacific Railroad will, no doubt, be made immediately, and upon which the Government will withdraw from settlement the alternate odd sections for a region of country forty miles wide on each side of the line, and hold the balance, or even numbers, as double *minimum*, or at $2 50 per acre if entered, or give 80 acres for homestead right.

The policy of the railroad company in conformity to their interest, will be to encourage settlement, and hence there can be no doubt but every facility will be afforded for distributing the land at such a price, and upon such terms as will insure a speedy settlement. There is no restriction respecting the price at which the company may sell their land until the expiration of five years after the completion of the road; after that date, the company must sell for $2 50 per acre.

TRADE OF PUGET SOUND.

The *Pacific Tribune* of Sept. 25th, 1869, says: By the kindness of Major Van Bokkelen, of the Custom House, we have been furnished with the following statement of the trade of Puget Sound District No. 103, from July 1st, 1868, to June 30th, 1869:

Coasting trade between Puget Sound and San Francisco—vessels enrolled and licensed in Puget Sound District: 13 schooners, 1 brig, 25 barks and barkentines, 4 ships and 8 steamers; total, 51 vessels. Total tonnage, 17,439 50-100

Vessels engaged in coasting trade that are enrolled and licensed in San Francisco District; 3 schooners, 5 brigs, 18 barks and barkentines, 5 ships; total, 31 vessels. Total tonnage, 12,839 98-100.

Number of registered vessels that cleared coastwise during the year ending June 30th, 1869: 51 vessels; tonnage, 25,045.

The vessels engaged in the coasting trade between this district and San Francisco, have for the past ten years, never averaged less than seven trips annually, which makes the clearances coastwise as follows, for the year ending June 30th, 1869: 261,368 36-100 tons leaving the district.

The shipments coastwise, as far as can be obtained correctly, are as follows:

	FEET.	VALUE.
Piles, spars and sawed lumber, (rough,) all kinds	103,500,000	$1,035,000
Dressed lumber of all kinds	52,500,000	1,050,000
Coal, tons	23,680	153,920
Miscellaneous articles of merchandise		39,500
		$2,278,420

Number of vessels engaged in trading between the ports on the Sound, that never leave the district: 15 steamers, 1,350 39-100 tons; 24 sloops, 174 31-100 tons; 9 schooners, 227 34-100 tons. Forty-eight vessels, 1,752 04 tons.

Foreign trade during the year ending June 30, 1869: 142 American vessels, 38,759 36-100 tons; 41 foreign vessels, 19,255 90-100 tons. Total, 183 vessels, 58,015 26-100 tons.

Articles of foreign export and value:

	VALUE.
Living animals, 13,285 head	$191,689
Grain	2,017
Flour	1,887
Furs	23,092
Cotton manufactures	1,345
Miscellaneous merchandise	62,005
Provisions	6,289
Lumber, spars, piles and lumber assorted	207,048
	$495,286

RECAPITULATION.

Whole amount of coastwise tonnage	211,368 36-100
" " foreign trade tonnage	58,015 26-100
Total tonnage	319,383 12-100
Value of exports coastwise	$2,278,420
" " foreign	495,286
Total value of exports	$2,773,706

Imports coastwise cannot be ascertained, as vessels trading coastwise do not report at Custom House.

FOREIGN IMPORTS.

	VALUE.
Merchandise admitted free of duty	$ 1,095 00
Paying duties	62,886 41
	$63,981 41

The value of the imports and exports of Puget Sound District, as far as can be ascertained, $2,837,987 41.

Vessels sailing out of district regularly, under temporary papers issued in this district; 15 barks, tonnage, 6,372 90; two steamers, tonnage, 579 48. Total, 6,952 38 tons.

Total tonnage recorded in district:

	TONS.
82 sail vessels	22,689 94
18 steamers	2,525 71
	24,915 65

Vessels built in the district during the year.

	TONS.
2 sloops	12
6 schooners	670 14
4 barks and barkentines	1,934 51
1 brig	230 60
5 steamers	935 68
	3,782 32

The following statement has been kindly furnished by Hon. M. S. Drew, Collector of Customs for Puget Sound District, for the year ending June 30, 1870:

Value of goods imported from foreign countries	$43,105 00
Amount of duties collected	41,326 00

EXPORTS OF DOMESTIC PRODUCE.

Value exported in American vessels	$291,010 00
" " " Foreign "	149,905 00
Total exports foreign	$440,915 00
Live animals of all kinds	43,713 00
Lumber of all kinds	266,288 00
All other articles	130,914 00
	$440,915 00

TONNAGE BELONGING TO THE DISTRICT.

	TONS.
62 sailing vessels	13,711 09
19 steamers	2,015 87
8 scows and barges	140 77
Total tonnage	15,867 73

Vessels cleared during the year: American vessels for foreign countries—115 steamers, 4 ships, 13 barks, 2 brigs, 13 schooners, 2 sloops; total number of vessels, 149; number of tons, 55,606 25; number of men, 2,105.

Foreign vessels for foreign countries: 6 steamers, 16 ships, 6 barks, 3 sloops; total, 31; number of tons, 19,227 42; crew, 456.

American vessels coastwise: 29 steamers, 11 ships, 18 barks, 1 brig and 9 schooners; total, 68; number of tons, 31,779 74; crew, 1,092. Total number of vessels cleared, 248; total number of tons, 106,613 41; crews, 3,653.

Vessels entered during the year: American vessels from foreign countries—95 steamers, 1 ship, 10 barks, 1 brig, 18 schooners and 22 sloops; total, 148; number of tons, 39,840 06; crews, 1,852.

Foreign vessels from foreign countries: 6 steamers, 7 ships and 3 sloops; total, 16; number of tons, 5,366 57; crews, 62.

American vessels coastwise: 39 steamers, 18 ships, 43 barks, 3 brigs and 6 schooners; total, 109; number of tons, 55,561 18; crews, 1,853. Total number of American vessels entered, 272; total number of tons, 100,767 81; total number of crews, 3,502.

In the coasting trade belonging to other ports there are eighteen vessels, *viz*: 1 ship, 12 barks, 1 brig and 4 schooners; total, 18; number of tons, 7,761 25.

The value of the shipments coastwise cannot be obtained from any other source than the mills from which the lumber is shipped, as vessels do not clear from this port unless sailing under a register.

The year's shipment coastwise is estimated at three million dollars, being an increase over the preceding year of nearly three hundred thousand dollars.

Imports coastwise cannot be ascertained, as the vessels are not obliged to report at the Custom House except in certain cases.

SHIP BUILDING.

Eighteen vessels, of all kinds, including five steamers, were built on the Sound during the year ending June 30, 1869. The statistics are not at hand for the year 1869-70, but it is known that not so many have been built as during the previous year, in consequence of the low rate of freights prevailing on the coast and elsewhere. A ship of 1,000 tons burden is on the stocks at Port Madison, building by Messrs. Meigs & Gawley of that place. Some schooners are building for the cod fisheries of the North, and steamers for local trade.

The board of marine underwriters of San Francisco, during the year 1867, instituted an inquiry respecting the cost of ship building on the Pacific coast, as compared with Eastern ship yards. The facts developed by these inquiries were that vessels could be built of the tim-

ber found on this coast, all other finish the same, at a less price than on the Atlantic sea-board.

The committee appointed to make the investigation say:

"The growth of the business has also been hindered by grave doubts as to the strength and durability of our firs when used as ship timber. The predilections of all American and English shipwrights are naturally for oak; but oak has been scarce, or rather the oak of this coast has generally been found worthless for these purposes, while only the laurel has been found suitable as a substitute for it. Sufficient time has, however, elapsed to prove to us that we have several kinds of ship timber in the greatest abundance, and of a size and quality in every way better adapted for ship building than the timber used for many years back on the coast of Maine or the British Provinces.

"RED AND YELLOW FIR.—These trees, which constitute about one-half of the dense growth of timber of Oregon and Washington Territory, have become celebrated throughout the world for their magnificent proportions and the serviceable quality* of the spars and lumber supplied from them. They frequently furnish sticks 150 feet long, 18x18 and even 24x24 inches square, without a particle of sap, without a rent or check, perfectly sound and straight. Planks of this timber, 60 and 90 feet long are readily obtainable, thus avoiding the necessity for more than one-third to one-half as many butts or scarphs in a ship's sides, decks, or fore-and-aft timbers as are required in Eastern or European vessels. As to the strength of these woods many mechanics think it fully equal to that of Eastern white oak, and they all agree that if oak be stronger, nothing is easier than to use enough more of our fir to make up the difference in strength. In some other respects the fir has the advantage over oak. It contains just enough pitch to enable it to hold iron fastenings with a tenacity so great that bolts and spikes generally break before they will draw out of it. Iron never becomes "sick" when imbedded in it, as it does when corroded by the acid which saturates all kinds of oak. As to its durability, we know that although it has not yet been tested as the sole material of a guano or pepper ship, yet it has been extensively used for new timbers, planking, ceiling decks, keelsons and stancheons, in large vessels repaired on the coast; it has been the sole material used in building our coasting and river schooners; it has built the *Chrysopolis, Yosemite, Capital, Geo. S. Wright, John T. Wright*, and many other river steamers. It has been used in doubling and rebuilding all the old steamers on this coast, and *we have never yet met a ship-master who, during our fifteen years of this kind of experience, has complained of its want of durability.*"

* * * * * * *

"TIDE-LAND SPRUCE.—This tree is also abundant in many parts of Washington Territory, Oregon and Alaska. It resembles the hackmatack of the Eastern States, and is particularly suitable for top timbers

*NOTE.—Experiments made by the French authorities in the imperial dock-yard at Toulon, show that masts from Vancouver's Island are superior to the best class of Riga spars. The report of the French engineers, which is equally applicable to the masts and spars of Puget Sound, says: "The principal quality of these woods is a flexibility and tenacity of fibre rarely met with in trees so aged; they may be bent and twisted several times in contrary directions without breaking," and possesses other rare qualities, such as "exceptional dimensions, strength and lightness, absence of knots, &c."

and natural crooks. Knees and breasthooks of almost any size can be procured from it; indeed, it is our principal dependence for these portions of a vessel's frame, on account of its spreading its roots flat on the surface of the ground. The durability of this wood is believed by mechanics to be about the same as that of hackmatack. It holds iron fastenings remarkably well, and grows to a size sufficient for all ship-building purposes."

"YELLOW CEDAR.—This tree is undoubtedly the most valuable of all our trees for ship-building. It is found in great quantities at Coos Bay, thence along the coast of Oregon to Port Orford; also, on the islands and main land of Alaska. The Indians of the latter Territory have for ages used its trunk for their canoes. A vessel built of it at Sitka, thirty years ago, was recently examined, five years after she was wrecked, by the officers of the revenue steamer *Lincoln*, and the timbers appeared as sound and perfect as on the day she was launched. This cedar is much finer grained, handsomer, more dense, and a better timber in all respects than any other cedar known. It grows to a height of 175 feet, with a diameter of four feet. It is probably the finest material for decks in the world."

* * * * * *

"WHITE CEDAR.—This tree, the common cedar of the Eastern States, is found abundantly on the mountains in Washington Territory. It possesses here the same qualities as elsewhere, and is just as suitable for ship-building, and just as durable here as at the East. Logs of it have been found at Puget Sound under the roots of living trees four feet in diameter, yet remaining perfectly sound, showing that after two or three hundred years, it betrays no signs of decay."

"OAK.—The oaks of this coast have been generally found unfit for ship-building, or indeed for any other mechanical purpose; yet we are informed that a sufficient amount of good oak can be procured about Puget Sound for stems, stern-posts and other portions of ship's frame, especially if the timber be "docked" a long time before using it. Judge O. L. Shafter, late of the Supreme Court, who is largely interested in the Point Reyes Rancho, informs us that a variety of oak is found in great abundance about Bodega and Tomales, which is just as good for every mechanical purpose as the best Connecticut pasture oak —that it grows to a sufficient size for ship-building, furnishes a great number of natural crooks, and is tough enough to make axe helves or wagon material. As Bodega and Tomales are good harbors, and of easy access, there is no reason why this material could not be delivered at any point on the coast at a very moderate expense."

"LAUREL.—Considerable quantities of this timber are found on the northern coast range of California, and throughout Oregon and Washington Territory. Sticks of 50 to 60 feet long may be frequently found large enough for keels and keelsons. It makes excellent material for stancheons, stems and stern-posts, rudder-stocks, aprons, fife-rails and cabin finishing; for which latter purpose it is eminently fitted from its beautiful colors and susceptibility of taking a high polish. Its durability, however, when put into a ship's frame between wind and water, has been questioned, and it has not been used extensively or long enough to settle this point definitely. Those who are best qualified to judge, be-

lieve that when cut at the proper time of year, and well seasoned before using, there will be no trouble about its durability."

* * * * * *

"FOREIGN WOODS.—If it should, however, be found that none of our present coast woods are suitable for those portions of a ship's frame usually constructed of hard wood, there is no doubt we can import the teak from India, or the koah wood, from the Sandwich Islands, or the mahogany, from Central America and Mexico, or oak from Australia, as cheaply as foreign woods are now imported into Great Britain for ship-building purposes; provided the transportation be effected in suitable vessels and on a large scale. We should be no worse off in this respect than the ship-builders of New York, Boston or Maine, nearly all of whose timber is now procured from a great distance."

"IRON.—Has lately begun to be produced near St. Helens, Oregon, from a mine said to be inexhaustible, and yielding an ore so rich, that we are informed that shoe shapes may be hammered out, or castings made at the furnace from the first melting. This mine is surrounded by exhaustless material for charcoal. It is owned by men of large capital and enterprise, who will doubtless soon be able to produce iron of every description below the present cost of importation."

* * * * * *

"PITCH, TAR, TURPENTINE AND ROSIN.—During the first years of the late war, the high prices of these articles stimulated several parties to attempt their production, both in this State and in Washington Territory. The result was a finer article of pitch and rosin than any ever imported from the Carolinas or Stockholm, and the discovery that if there was a larger demand, both of these articles, and also a fine quality of turpentine can be produced in any quantity, and at prices below the cost of importation, almost at the ship-yards themselves. Single trees are frequently met with on Puget Souud, whence from two to ten barrels of raw pitch can be drawn at one tapping. The Sugar Pine of California also yields a superior article of pitch and rosin."

"COAL.—Of a quality resembling anthracite is found at a mine a few miles from Seattle, on Puget Sound. The principal article of export from Coos Bay and Bellingham Bay, is coal of a quality sufficiently good for all purposes connected with ship-building; and it can be furnished at the yards adjacent at much less than New York or Boston prices."

"CORDAGE AND OAKUM.—Can be supplied in any quantity, and at prices below the cost of importations by the San Francisco Cordage Factory—an establishment that has for twelve years past supplied a large portion of the Manilla rope used on this coast. We are not aware that this establishment has yet undertaken the manufacture of tarred rigging, but there can be no doubt that, as soon as our farmers have made up their minds to raise hemp—for which many parts of our State are specially adapted—this, or some similar ropewalk will be able to supply all the tarred rigging required on this coast for both new and old vessels."

"SPARS.—Since Puget Sound has for years supplied several British and French ports, China and Australia, with the finest spars in the world, it is needless for us to allude to this important item, except to remark, that in nearly all the prominent ship-yards of the old world a

heavy freight has to be paid on spars, because they require vessels of a large size to be injured for other purposes by the cutting of bow-ports; while the bulky nature of the cargo requires a long time for loading and discharging. All this is wholly saved at Puget Sound and at all other of our lumber ports, where the finest of spars can be procured in immense quantities for the mere cost of cutting and towing them to the yards."

MANUFACTURING.

Manufacturing interests are almost entirely undeveloped, except that of lumber of all kinds, which it is thought has obtained a character second to none on the continent. One hundred and eighty million feet of lumber of all kinds were manufactured and shipped from thirteen of the principal mills on the Sound, during the years 1869-70, not to speak of the home consumption, the supply of which is usually obtained from neighborhood mills erected upon water powers, found in almost every settlement. The full capacity is much larger than the amount actually made. This is accounted for by the fact that lumber is "down" in the markets, and hence all are running upon easy time until business becomes better.

But few hides are now exported, yet the principal portion of the leather manufactured by our tanneries is sent to San Francisco, and boots and shoes purchased in the same market to supply the demand. There is one tannery at Tumwater, one at Steilacoom and one at Seattle, all doing a thriving business.

There are two flouring mills at Tumwater, two near Steilacoom one at Seattle and one at Port Gamble, that are in close proximity to the Sound. These mills import large quantities of wheat from Oregon and California, in addition to that obtained from the farmers, and supply not only the local demand for the lumbermen and towns on the Sound, but ship to British Columbia and the Northern markets. The aggregate capacity of these mills are three hundred bushels every twenty-four hours

One woolen factory has recently been erected near Steilacoom, at a cost of twenty thousand dollars, but not yet running. It is hoped this will be the precursor of others to follow, that will effectually check the export of wool, and a corresponding import of woolen fabrics.

Three foundries and machine shops, one at Olympia, one at Seattle and one at Port Madison, supply only in part the wants of the community in their line, as they cast only to order.

Other minor branches of manufacturing and mechanical industry, such as wagon, blacksmith and cooper shops, sash and door factories, cabinet shops, boot and shoe shops, that supply the local demand, are followed in the different towns and localities suited to their wants.

There is a boot and shoe manufactory at Olympia, established on a paying basis. A new furniture manufactory has recently been established at Tumwater that will be able to supply the trade at Eastern rates.

STATISTICS OF COUNTIES.

VOTE FOR THREE YEARS.

Counties.	County Seat.	Area of square miles.	Surveyed square miles.	Under contract, 1870, square miles.	1867.		1869.		1870.	
					Democratic.	Republican.	Democratic.	Republican.	Democratic.	Republican.
Clarke	Vancouver	1350	432		320	342	287	374	312	406
Chehalis	Montesano	2200	450		20	57	34	60	30	76
Cowlitz	Freeport	400	216	36	83	83	91	101	88	110
Clalm	New Dunginess	1700	100		49	67	41	68	38	87
Island	Coupville	200	210		84	81	94	83	98	80
Jefferson	Port Townsend	1670	110		113	129	83	264	112	274
King	Seattle	1800	432	72	128	154	176	184	273	358
Kitsap	Port Madison	400	288		111	171	96	260	127	326
Klickitat	Rockland	3000	1600	144	13	38	96	59	32	65
Lewis	Claquato	1600	396		85	76	84	106	95	128
Mason	Oakland	800	300		38	35	53	23	66	40
Pacific	Oysterville	900	216		16	122	15	87	18	151
Pierce	Steilacoom	2000	108	360	138	86	151	133	202	185
Snohomish	Snohomish City	1700	150	36	61	69	115	120	88	184
Skamania	Lower Cascades	2700	30		43	28	79	22	36	7
Stevens	Fort Colville	23,400	250	288	103	49	57	55	63	92
Thurston	Olympia	672	500		205	225	214	260	241	414
Wahkiakum	Cathlamet	325	13	36	8	8	11	20	17	42
Walla Walla	Walla Walla	3500	1260		606	482	740	384	770	531
Whatcom	Whatcom	4300	110	36	65	48	81	55	56	100
Yakima	Thorp's	4800	1150	108	25	19	45	25	71	60
					2,272	2,369	2,595	2,742	2,803	3,618

FEDERAL AND TERRITORIAL OFFICERS.

NAMES.	OFFICE.	RESIDENCE.	COMPEN.
Edward S. Salomon.	Governor	Olympia	$3,000
Elias Wolf,	Private Secretary	"	
James Scott,	Secretary	"	2,000
E. P. Ferry,	Surveyor Gen.	"	2,500
Col. Samuel Ross,	Sup't Ind. Aff.	"	These
Maj Thos. H. Hay,	Indian Agent	Quenault	draw pay
Capt. Geo. D. Hill,	" "	Tulalip	as officers
Lieut. Jas. H. Kelly,	" "	Skokomish	U. S. A.
Lieut. Jos. M. Smith,	" "	Simcoe	det. duty.
Orange Jacobs,	Chief Jus. 3d D.	Seattle	$2,500
Jas. K. Kennedy,	Asso. " 1st D.	Walla Walla	2,500
Roger S. Greene,	Asso. " 2d D.	Olympia.	2,500
Leander Holmes,	U. S. Attorney	Vancouver.	250 & fees.
E. S. Kearney,	Marshal	Walla Walla	250 " "
Hazard Stevens,	Collector	Olympia	3,000
Jas. R. Hayden,	Assessor	"	$10 per day
M. S. Drew,	Col. of Customs	P. Townsend	2,000 & fees
F. M. Lamper,	Rec. Land Office	Olympia	500 " "
Jacob P. Clark,	Reg. " "	"	500 " "
Samuel W. Brown,	Rec " "	Vancouver	500 " "
E. G. Adams,	Reg. " "	"	500 " "
PAID BY THE TERRITORY.			
S. H. Mann,	Librarian	Olympia	$400
J. G. Sparks,	Ter. Auditor	"	500
Hill Harmon,	Ter. Treasurer	"	4 per cent.
Andrew J. Cane,	Pros. Atty 1st D.	Walla Walla	$1,000
A. G. Cook,	" " 2d D.	Vancouver	1,000
Chas. M. Bradshaw.	" " 3d D.	P. Townsend	1,000

MEMBERS OF THE LEGISLATURE.

HOUSE.

Thurston county—D. R. Bigelow and R. Brewer. Thurston and Chehalis—Edward Campbell. Jefferson—J. J. H. Van Bokkelen. Jefferson and Kitsap—Edward Vrooman. Kitsap—George Stetson. Pierce—R. S. Moore. Pierce and Mason—Stephen Judson. Walla Walla—Jas. H. Lasater, David Ashpaugh, Elisha Ping, T. W. Whetstone, John Scott and N. G. Lloyd. Clarke—Jas. H. Herns, G. W. Maxwell, S. D. Maxon and W. C. Abbott. Stevens—Park Winans. Lewis—W. B. Gosnell. Pacific—Charles Barstow. Snohomish—W. B. Sinclair. Whatcom—C. C. Finkbonner. Klickitat—H. D. Cock. Skamania—J. W. Brazee Clalm—Hezekiah Davis. King—George Me-

Conaha, T. D. Hinckley. Island—Thomas Coupe. Cowlitz and Wahkiakum—Geo. Gray.

COUNCIL.

Thurston and Lewis—E. L. Smith. Jefferson and Clalm—G. V Calhoun. Clarke, Cowlitz, &c.—William Huntington. Clarke, Klickitat, &c.—E. S. Joslyn. Snohomish, &c.—H. A. Smith. Walla Walla, &c.—D. Stewart, H. D. O'Bryant. Pierce, Mason and Chehalis—John McReavy. King and Kitsap—Joseph Foster.

STATE CONSTITUTION.

The question of calling a convention to form a State constitution was submitted to the voters of the Territory at the election held in June, 1870. A very light vote was cast, with the following result: For convention, 974. Against convention, 1,109. Majority against convention, 130.

PRICES CURRENT.

The subjoined table of prices current is intended to exhibit the average cost to purchasers in the towns and market places on the Sound, for the year 1869-70. In the Southern part of the Territory, near the Columbia River, many articles of country produce are lower, other articles about the same:

GROCERIES AND PROVISIONS.

Beans—Cal. red 5@8c; home product 6c.

Butter—37½c.

Bread—Navy 4½c; pilot 5c; butter crackers 8c; soda crackers 8c; sugar crackers 10c; pic-nic crackers 8c; soft bred, fresh 5c.

Cheese—22c.

Coffee—25@30; Java, 40c.

Coil Oil—60@70c ₩ gal.

Cod Fish—9c.

Candles—25c.

Cream Tartar—62½c.

Eggs—33c ₩ doz.

Fish—Salmon $10 ₩ bbl; fresh 2@5c ₩ lb

Flour—Ranier $5 50 ₩ bbl; extra family 6 00; XXX Lincoln Mills 6 50.

Honey—Home raised 25 c ₩ lb; Eastern in cans 37c.

Lard—18@20c.

Molasses—50c ₩ gal

Onions—$1 50 ₩ bu.

Peas—3c ₩ lb

Potatoes—1c ₩ lb.

Rice—9c ₩ lb; 50 lb sacks $4 00.

Syrup—90c@$1 00 ₩ gal.

Sugar—Sandwich Island ₩ lb 10 to 14c; Cal. refined 14@16c

Saleratus—12½@16 c₩ lb.

Soap—$1 50 to 2 00 ₩ box.

Spices—25@37½c ₩ bot

Salt—Unground, $1 50 ℔ hundred; half ground, 2 00; fine 2 25.

Tea—75c to $1 25 ℔ lb.

BOOTS AND SHOES.

Eastern and California—Children copper toe kip, $1 00 ℔ pair; do. morocco, 1 50 to 2 75; do. calf skin or kid 1 50 to 2 00; calf skin, misses', (pegged) 150 to 175; do. sewed 2 00 to 3 00; morocco, cloth and misses' 3 00; ladies' peg kip shoes 1 50 to 175; sewed kip or calf 2 00 to 3 00; kid, cloth or morocco 2 50 to 4 00; ladies' and mens' slippers 1 00 to 2 00; boys' boots 1 75 to 5 00; mens' boots 4 00 to 9 00; mens' brogan 1 50 to 2 50; rubber boots 5 00 to 7 00.

Home Manufactured—Mens' stoga boots $63 00 ℔ doz; do. kip $4 00; do. heavy brogans 36 00.

DRY-GOODS AND CLOTHING.

Alapaca—50@1 50 ℔ yard.

Blankets—Oregon manufactured ℔ pair, No. 1 $10 00; do. No. 2 8 50; do. No. 3 6 50; 14 lb, $15.

Domestic—Brown standard, No. 1, 18c; do. No. 2, 16c; light 12 c.

DeLanes—One-half wool 25c ℔ yard.

Denims—20c ℔ yard.

Flannel—Eastern 3-4 white, No. 1, 30c; No. 2, 40c; No. 3, 75c; Oregon manufactured 4-4 75c; do. fancy colored 3-4, 62½; do. shirting 62½; Canton 25 to 37½ ℔ yard; one-half wool 37½@62c ℔ yard.

Hickory Shirting—20@25c ℔ yard.

Doe Skin—$1 25 to 1 50 ℔ yard; do. fancy 1 50.

Mens' Pants—$2 00 to 12 00 ℔ pair; duck 1 00 to 1 25; denim 75c to 1 25.

Hats—Mens' hats $1 50 to 5 00 each.

Overcoats—$6 00 to 40 00 each.

Suits—Mens' beaver $25 00 to 27 50; do. frock 30 00 to 35 00; cassimere 12 00 to 30 00; black cloth 30 00 to 50 00; boys' 6 00 to 20 00.

Shirts—Mens' white $1 50 to 3 00; woolen overshirts 1 50 to 4 00; undershirts and drawers 1 75 to 5 00 ℔ pair.

Shawls—72x72, plaid, $4 50; do. black cashmere 5 00; 4-4 single $2 50 to 6 00; 4-4 double 4 00 to 12 00.

Sheeting—Unbleached 4-4 ℔ yard 15c to 30c; bleached 4-4 25c; do. 6-4 37½c; do. 10-4 62½.

MEATS AND VEGETABLES, WHOLESALE.

Beef Cattle—Nett weight, grass fed 6@7c; do. stall fed (winter) 10c; corned $14 00 to 18 00 ℔ bbl.

Mutton—Nett 6c; live weight $2 50 to 3 50 ℔ head.

Pork—Slaughtered 7@8c; gross 6c; $24 00 ℔ bbl 200 lbs.

Beef—$14 00 to 18 00 ℔ bbl.

Potatoes—50c ℔ bu.

Cabbage—75c ℔ doz.

Beets—$1 00 ℔ bu.

Carrots—75c ℔ bu.

Tomatoes—3c ℔ lb

Turnips—50c ℔ bu.

RETAIL.

Beef—Grass fed (summer) 8@12½c; stall fed (winter) 10@15c.
Mutton—7@12½c ℔ lb.
Pork—10@12½c ℔ lb.

OTHER ARTICLES.

Hides—Green, 5c.
Tallow—7@10c.
Milch Cows—$30@65.
Hay—In bales $16@18.
Chickens—℔ doz $3 00@4 00.

SADDLERY.

Harness—No 1 Con. harness, silver plated, hames, breeching $50 00; do. trace bearers 42 50; 2 do. plain breeching 45 00; do. trace bearers 40 00; common clef harness, breeching 35 00; do. trace bearers 30 00; short tug harness 25 00@30 00; double carriage harness 60 00 and upward; do. single 30 00 and upwards.

Saddles—Ranchero, full seat $25 00 to 30 00; do. half seat 18 00 to 30 00; common 15 00 to 20 00.

STATIONERY

Paper—Congress letter $5 00 to 7 00 ℔ ream; legal cap 6 00 to 8 00; Con. cap 6 00 to 7 50; flat cap, 16lb, 5 50; printing, 24x34, 6 00; drawing paper 12 to 50c ℔ sheet.

Tracing Cloth—40 in., $1 00 ℔ yard.

Cards—Printers' $1 87 to 4 00 ℔ M.

Blank Books—One-half bound 42c ℔ qr.; full bound 80c ℔ qr.; bound Russia 1 50 ℔ qr.

Wrapping Paper—Manilla $2 25 ℔ ream; straw 1 10; hemp 3 00.

Envelopes—5 gov., $1 00 to 6 00 ℔ M.; 9@10 9 00 to 10 50.

PAINTS AND PAINTING.

Wages—$4 00@5 00 ℔ day; by contract, ℔ square, two coats, 3 00@4 00.

Oil—$1 75 ℔ gal.

Turpentine—$1 25@1 50 ℔ gal.

White Lead—$3 00, 3 50@4 00 ℔ kg 25 lb.

Varnish—$3 50 to 10 00 ℔ gal.

Ground Paints—In oil, 50c ℔ lb.

Brushes—50c to $3 50 each.

Gold Leaf—75c ℔ book.

Glass—$2 50@3 00 ℔ box.

Paper Hanging—25@50c ℔ roll.

FRUITS.

Apples—Green, 1@2c ℔ lb; dried 6@10c.

Pears—Green, 2@3c ℔ lb.

Cranberries—25@37½ ℔ gal.

Strawberries—12@20c ℔ lb.

FURNITURE.

Chamber Sets—Soft wood $45 00 to 65 00; hard wood, curly maple $100 00.

Bureaus—Maple $25 00 to 40 00; cedar 15 00.

Tables—Maple extension $2 50 ₩ foot; breakfast, maple and alder $7 00 to 10 00.

Bedsteads—Hardwood cottage, maple and alder $6 00 to 8 00.

Chairs—Winsor $1 25 to 1 50 each; extra Grecian, Eastern make, $2 25 to 2 50; ladies' dining rosewood $3 00 to 3 50 each.

Mattresses—Spring, double $20 00; three-fourths 15 00.

Lounges—$20 00 to 35 00 each, according to finish.

Carpet—2 ply $1 25 ₩ yard; 3 ply 1 75; Brussels 1 75.

Matting—25 to 37½ ₩ yard; drugget $1 50.

TOWNS.

SEATTLE.

Seattle is in North latitude 47° 36′, longitude 45° 21′, West from Washington. Elliott bay, the Seattle harbor, is a part of the waters known as Admiralty Inlet, and is on the East side of the channel, forty-five miles from the Straits of Juan de Fuca, and one hundred and thirty-six from the Pacific Ocean by the ship channel. Eighty miles in the Straits, bearing nearly due East, will average twelve miles in width, the remainder of the distance bearing nearly South-East through a channel averaging three and a half miles wide, and comparatively straight; hence vessels are seldom detained in the passage to and from this harbor.

The following is the description of Seattle and Duwamish (Elliot) Bay, as taken from the U. S. coast survey:

"Abreast of Port Madison the eastern shore of the inlet retreats and there receives several small streams of water, but it gradually makes out into a very long, low sand point, called West Point, which forms the extreme northwest part of the entrance to Duwamish Bay. The bay runs east by south six and a half miles and has a width of two miles. To the south point, called Battery Point, which is low and bare, with a curiously shaped mound rising sharply behind it, the course is about southeast by south, and distance four and a half miles. Under West Point there is anchorage in ten to fifteen fathoms after getting towards the bluff; but on the north side of the point the water is very deep. Through the center of the bay the depth ranges from eighty-eight to forty fathoms. On the north side of Battery Point a vessel anchoring in twenty fathoms, cannot have a greater scope of chain than thirty-five fathoms, without being too close to the shore. When we anchored there in thirteen fathoms and veered to twenty-five fathoms of chain the vessel's stern was in two and a half fathoms. The beach is smooth and very regular, being composed of sand and gravel. On this side of Battery Point is the deserted town of Alki, the Indian phrase for "by and by.") The town has had several names, but there is nothing about it to command trade.

"The bluff head within the bay, two miles north northeast of Battery Point, is Duwamish Head. It is steep, about one hundred and fifty feet high, covered with timber, and the beach at low water stretches

out over a quarter of a mile north-northwest from it. The head of the bay receives the Duwamish River, and for one or two miles is an extensive flat, bare at low water."

By the U. S census for 1870, there are 1142 inhabitants in this place. There are always many transient persons from the mills and numerous logging camps, who throng the business streets by day and tax the hotels to their utmost capacity by night. The greater part of the town is built upon a rather abrupt hill-side, facing the bay, which gives a splendid view as one recedes from the water.

The Seattle *Intelligencer*, of July 18th, 1870, says: "Last year there were constructed in this city one church (Catholic), eleven buildings for stores, and thirty-seven one and two-story dwelling-houses, besides some twenty odd smaller buildings. This year, up to the present time, there have been built, and are in process of construction, one church (Episcopal), one public school building, three warehouses, seven business houses, one livery and sale stable, and forty-eight one and two-story dwelling houses, some of them quite expensive structures, besides an unusual number of smaller tenements. Two or three of our hotels have been greatly enlarged and improved to accommodate their increasing business."

Many neat residences, with fruit grounds and gardens, are found here, adding beauty and comfort to the place. Here, as elsewhere on the Sound, fruit of all kinds is produced in great abundance. About one-half of the lumber interest on the Sound is within a radius of twenty-five miles of this place, which alone is sufficient to build up a large and lucrative traffic.

In addition to this trade, Seattle has easy access by river navigation to Duwamish and White river bottoms, one of the finest agricultural regions near the Sound that has been settled. The coal mines now being developed give an additional impetus to the trade and improvements.

The Territorial University is handsomely located upon the rising ground back of the city. The building is one of the finest in the Territory, and large enough to accommodate the wants of a much larger population than is now in the Territory.

Beautiful, clear lakes, of pure water, abound in the region adjacent to the Sound, oftentimes high up on the table lands. Lake Washington, eighteen miles long, and averaging about two miles in width, lies immediately East of Seattle, and nearly parallel to the bay. This lake lies but little above tide water, and is connected with the bay by its outlet, Black river, and through the channel of Duwamish river, altogether nearly enclosing as an island the ground upon which the town is built. At a light cost this inland navigation can be rendered available for light draft steamers, adding a beautiful water front to the city, should the wants of commerce ever demand so large an area. The lake is already used for the transportation of coal from the Lake Washington mines, in connection with tram roads on either side.

OLYMPIA

Olympia is the Capital of the Territory, and is situated at the head of the Sound in North latitude 47° 03′, longitude 45° 55′, West from Washington, and contains 1,502 inhabitants.

Budd's Inlet, upon which the town is built, is described by the United States Coast Survey as "six miles long, three-quarters of a mile wide, and runs nearly South. The shores are steep and wooded, and the head of the bay is an immense mud flat, behind which is the town. It acquires prospective importance by being the Capital of the Territory, but especially on account of its proximity to the Columbia River Valley, and to the head-waters of the Chehalis. A depth of three fathoms can be carried on the West side of Budd's Inlet, within one and a half miles of the wharf, and one fathom within a mile on the Eastern side. Vessels are brought up to the wharf at the highest tides, and then rest in the mud until ready to leave.

"The approximate corrected establishment is 5 h. 8 m., and the mean rise and fall of tides 9 .2 feet.

"The greatest difference betwern the highest and lowest tides is reported about twenty-four feet, and is doubtless more than this, when we compare its position with that of Steilacoom." This measurement is in nautical miles. The entrance to the bay is nearly one statute mile in width, soon widening out to one and a half miles, becomes narrow opposite the wharves, and passing on to the South one mile and a half, at an average width of not more than 400 yards, receives the Deschutes river at Tumwater, a town of 200 inhabitants.

This river, by a succession of falls within the distance of three hundred yards, descends eighty-five feet, and at the very lowest stage affords a volume of water of 2,500 cubic inches, at a velocity of 522 feet per minute. During the greater part of the year it is estimated that more than double that volume of water pours over these falls, and at any time during a still evening the rush of waters can be heard for miles through the surrounding country.

Ocean-going steamers, and vessels of several hundred tons burthen reach the wharves at high tide, and remain until discharged.

The land adjacent to the bay is elevated above the water about fifty feet at the front, at some points rising still higher as you recede from the bay, at others running off level. At the point where the town is built the hills seem crowded back from the front, and form a sort of valley, which, with the tide-flat to the North and West, is estimated to cover an area of five square miles, that would be level or nearly so; the adjacent lands to the South and West rising gradually to an elevation of about one hundred and twenty-five feet, and continues so to Tumwater, overlooking the bay to the West and North.

The interests of Tumwater and Olympia are so near identical, their location such as eventually to run together and form one city, that for the purposes of this article it is sufficient to describe them together.

This is the nearest point of the Sound to the Columbia River, and hence all the travel overland concentrates at this place. Two lines of daily stages run each way between this place and the Columbia River, besides extras as demanded. Two lines of semi-weekly steamers run North from Olympia, leaving Mondays and Thursdays, returning Wednesdays and Saturdays.

Ample as the water power of the Deschutes river is without improvement, it can be made much greater by a small outlay. In addition to this, Black Lake, but three miles distant, at an elevation of one hun-

dred and forty feet, can easily be turned into the ravine formed by "Percival's creek," and furnish a very large water power. From the position of Black Lake and the Chehalis, it seems practicable to turn the waters of the latter into the lake, and thence to the Sound. This done, an immense power would follow, besides an inland water communication with the clay region of the Chehalis and surrounding country.

Mr. R. A. Abbott, builder, furnishes the subjoined statement of the buildings erected in the town of Olympia within a period of twelve months just passed: 47 dwellings, 11 stores, 1 brick bank, 2 hotels, 1 brick jail, 1 church, 35 smaller buildings, 1 saw mill, 2 sash and blind factories, 1 cabinet manufactory, 1 wagon shop and 1 gun shop.

At Tumwater valuable improvements have recently been made. A new large saw mill has been built, a furniture and water-pipe manufactury established, besides other improvements of minor importance.

STEILACOOM.

Steilacoom is the county seat of Pierce county, and is handsomely located on the Sound just South of the "Narrows," connecting Puget Sound with Admiralty Inlet, and contains about three hundred inhabitants. The county buildings consist of a wooden court house and brick jail, costing ten thousand dollars. The other public buildings in the town are three churches, two school houses and a Masonic hall. The Sisters of Charity have established a boarding school for girls here, and usually have about forty scholars. The mail steamers of the Sound call four times a week in making their semi-weekly trips, besides the tow boats and independent line of steamers. A line of lumber vessels run direct to San Francisco, carrying freight and passengers at reasonable rates. The insane asylum buildings, formerly the officer's quarters at Fort Steilacoom, are one and a quarter miles East, and are handsomely located upon an open, dry prairie, with neat surroundings and a beautiful landscape. The insane are yet kept near Monticello, and will not be removed prior to July, 1871. The penitentiary is located upon a small island near the town, upon which work is soon to commence. At present the prisoners are kept in the county jail.

The harbor is large and commodious, deep water close up to the shores, and the anchorage good. The surrounding country back for a region of twelve miles square is upland prairie and timber, dotted with beautiful lakes of pure water, skirted with scrub oak, resembling in the distance the large apple orchards of older settled communities.

Over all the country mentioned there is a beautiful carriage way in almost every direction, both winter and summer, as the soil is sandy and gravelly and never muddy. The scenery in this vicinity is excelled nowhere on the coast. Four snow-capped peaks, St. Helens, Mt. Ranier, Adams and Hood, one of which is known to be a smouldering volcano, lies in the distance to the East and the South. The ragged Coast, or Olympian Range, is seen to the West, besides a beautiful fore-ground of dark green, never ending timber on the foot-hills adjacent to the Puyallup, Nisqually and White rivers, to the East and North, and to Hood's Canal to the West.

Steilacoom creek falls into the bay just below the town, giving power to one flouring mill and woolen factory recently erected, yet leaving the principal part of the power to run to waste. The creek it-

self is but three and one-half miles long, rising in a lake East of the town, falling in that distance nearly two hundred feet. The banks are literally lined with springs, some of which alone are large enough for mill powers, one in the vicinity being used for that purpose.

PORT TOWNSEND.

Port Townsend is the county seat of Jefferson county, and contains about five hundred inhabitants.

Point Wilson, just outside the harbor, is in latitude 48° 08′, longitude 46° 44′, West from Washington, and with Marrowstone Point opposite, on Whidby's Island, forms the entrance to Admiralty Inlet.

Quimper Peninsula, upon which Port Townsend is built, is described by George Davidson, assistant coast survey, as having "three miles in width and ten miles in length, offering great advantages as a location for a town," situated, as it is, with Port Discovery bay on the one side and Port Townsend on the other.

The harbor is described in the United States coast survey as being "favorably situated at the termination of the Strait of Juan de Fuca, at the outlet of the waters of Admiralty Inlet, Puget Sound, &c., and in proximity to the great labyrinth of inland waters of British Columbia. The entrance lies between Point Wilson and Marrowstone Point, the latter bearing east-southeast three and five-eighths miles from the former. Upon this line, and even outside of it, lies a bank extending two-thirds of the distance from Marrowstone, and having from six to fifteen fathoms, with hard, sandy bottom. Inside of Point Wilson, which is composed of low, sandy hillocks, as heretofore described, lies another low point called Point Hudson, distant one and three-quarters miles, southeast by south half south.

"Starting from the entrance line, about one and a half miles from Marrowstone, the mid-channel course of the bay is south-southwest, three miles, with an average width of two; thence southest one-third south for three and a quarter miles, with an average width of one and a quarter. The depth of water throughout is very regular, and ranges from eight to fifteen fathoms, with soft, muddy bottom inside of Point Hudson. Vessels coming from the strait steer for Point Hudson, as soon as it is opened by Point Wilson, passing the latter close, as twenty fathoms are found one hundred or two hundred yards off it. Upon approaching Point Hudson, and when within half a mile of it, gradually keep away about a quarter of a mile in from five to ten fathoms, and, as it opens, run quite close, with the summer wind off shore, to save making a tack; keep along half a mile to the town situated under the Prairie Bluff, and anchor anywhere off the town in ten to twelve fathoms, about a quarter of a mile from shore. In winter, anchor further out, to clear Point Hudson, in getting under way with a southeaster."

"A military post has been established (since abandoned,) on the bluff, two and a half miles south by west from the town, and on a site which commands one of the most beautiful views in these waters, having the bluff and varied shores of the bay on either hand; Admiralty Head, six miles distant; in the middle ground several distant, wooded ridges, and in the back ground the snow-covered, double summit of Mount Baker, ten thousand nine hundred feet in height, with the mouth of the crater distinctly visible between the peaks, and at times emitting vast volumes of smoke. The elevation of the line of perpetual snow

upon this mountain is three thousand one hundred and forty-five feet."

The present business part of the town is built upon a low, sandy beach, of but a few acres in extent, immediately adjoining which is an abrupt white bluff, elevated approximately one hundred feet above tide water. Unlike the general character of the land bordering on the Sound, this elevated prairie is slightly undulating, but comparatively smooth, with a quick, fertile garden soil upon the surface.

Upon this elevation is found the neat residences of the citizens, the marine hospital, churches, school-houses, &c. The Custom House for the Puget Sound district is located upon the beach below, hence all foreign shipping are compelled to enter and clear at this place.

VANCOUVER.

Vancouver is handsomely located upon the right bank of the Columbia river, 140 miles from the mouth, in latitude 45° 38′, longitude 45° 40′, West from Washington, and contains 959 inhabitants.

Ships of any size that can cross the bar at the mouth of the river can ascend with safety to this place. The tide affects the river this far up, often setting in with considerable current below. The Hudson's Bay Company early selected this location as a site for a chief trading post, and interfered for a time with a part of the land needed for city purposes; afterwards the Government reserve for "Fort Vancouver" embraced a part of the same. From its position it is highly probable that the North Pacific Railroad from the Sound to the Columbia river will pass through this place, and being considered the head of ship navigation on the Columbia river, will no doubt make a city of great importance.

MILLING TOWNS.

At each of the great mills, and at the coal mines, there are villages containing from 150 to 300 inhabitants. The improvements generally vests in the mill proprietors, and usually consists of a few handsome residences and comfortable houses for those engaged in and about the mills, a hotel, store, smith shops, &c., pertaining to the business, and forming each a community within itself. There is regular communication by semi-weekly mail steamers, and also by independent lines. At all these points the hum of machinery is constant, the rattle of lumber continuous throughout the day as it is taken from the mill directly into the vessel, presenting a busy scene, in contrast to the deep solitude reigning in the great forests before the advent of civilization here.

U. S. CENSUS FOR 1870.

Counties.	Number of dwellings.	Number of families	Number of white males.	Number of white females.	Number of colored males.	Number of colored females.	Total population 1870.	Total population 1860.	Real estate valuation.	Personal estate.	Tons of hay.	Bushels of Grain.
Clarke	664	634	1649	1279	68	85	3,081	2,384	$130,030	$372,999	5,740	60,110
Cowlitz	143	142	418	284	14	14	730	406	121,005	233,561	1,425	16,883
Chehalis	109	104	218	147	7	5	377	285	100,000	102,899	785	7,100
Clallam	110	108	219	81	42	32	394	149	111,285	104,870	1,086	16,534
Island	873		404	170	23	29	626	294	159,023	197,245	1,912	23,320
Jefferson	363	339	871	405	96	103	1,270	531	397,440	312,790		15,001
Klickitat	75	61	191	128	6	4	329	230	25,157	178,889	250	8,307
Kitsap	285	281	621	135	49	22	847	544	950,000	100,000	50	
King	418	370	1153	606	91	34	2,104	302	607,006	395,383	1,574	20,814
Lewis	345	293	478	331	41	39	880	394	395,850	230,275	2,005	51,508
Mason	83	38	184	56	14	19	273	162	168,000	98,000	412	1,000
Pacific	332	264	381	195	83	80	739	420	184,955	415,035	384	2,165
Pierce	307	252	666	433	163	157	1,411	1,115			1,311	24,923
Snohomish	257		393	144	48	91	676		19,270	118,000	807	2,850
Skamania	40		92	30	4	7	133	173	17,000	111,389		
Stevens	204	117	382	103	151	120	739	906		201,480	858	
Thurston	671	629	1315	842	39	30	2,216	1,507	1,339,295	844,355	2,471	33,222
Wahkiakum	60	62	126	26	6	6	270	42	58,245	316,756		26,332
Walla Walla	1139	1150	2999	2111	111	91	5,302	1,218	987,192	2,200,616	6,815	354,877
Whatcom	396		1193	162	146	87	1991	352	69,142	108,015	1,275	10,103
Yakima	115	89	191	128	6	4	329			192,650	181	2,539
Total							23,816	1,594				

WITHDRAWAL OF LAND.

On the 19th of October, 1870, the odd sections for twenty miles on each side of the surveyed line of the Northern Pacific Railroad was withdrawn from market, by orders from the Department at Washington, in accordance with the provisions of the charter requiring such action of the Government upon the location of the route by the company. This withdrawal extends from the Columbia river to the head of the Sound, and thence, parallel to and about eight miles distant from the eastern shore line of the Sound, to a point near Seattle. Two surveying parties of twenty men each are carefully retracing the preliminary surveys and definitely locating the route, and a third party have just passed the summit of the Cascades, through the Snoqualmie pass, 120 miles north of the Columbia river.

EASTERN OREGON AND WASHINGTON.

Phillip Ritz, an intelligent settler in the Walla Walla Valley, Washington Territory, supplies the following facts in regard to the agricultural resources of the great Columbia Plains:

"The great Columbia Plains, lying East of the Cascade Mountains and West of the Blue and Bitter Root ranges, and parallel with them, and parallel with and about 300 miles East of the Pacific Coast, constitute one immense grazing ground, stretching from mountain to mountain, about 150 miles in width, and from the Klamath Lake on the Southern boundary of Oregon in the South, far into British Columbia in the North, more than 400 miles in length, covered with the finest grass in the world, well watered in many places, with rivers and streams making down from the heavily timbered mountains, through the plains, and drained by the noble Columbia.

Walla-Walla City and Walla Walla Valley lie just North of the 46th parallel of latitude, and about in the centre of this country. This country is composed of a series of valleys, which are drained by the Deschutes, the John Day's, the Umatilla, the Walla-Walla, the Yakima, the Palouse, Spokane, and the Colville.

The soil throughout this vast region presents a great uniformity of character, being chiefly a light loam, with more or less alkali in all of it. Along and near the base of the mountains there are more loam and clay, and, consequently, more moisture retained in the soil than farther out in the valleys, although all the bottom lands along the streams contain a large amount of vegetable matter, which, with the moisture arising from the streams, renders them extremely productive.

One of the great peculiarities of this country is its mild climate. At this place, in latitude 46°, we seldom have snow before Christmas, and throughout the fall, for more than two months, we have the most delightful weather, generally frost at night, with bright, warm days, with the thermometer ranging from 55° to 70°.

Singular phenomena, peculiar to this country, are the periodical warm breezes through the fall and winter, which spring up away down in the valleys of California, break through the low passes of the Sierra Nevada range, on the head of the Sierra Nevada range, on the head of the Sacramento, and, passing through by the Klamath Lakes, sweep along the base of the Blue Mountains, and warm up the whole atmosphere beyond the 49th parallel. Such a breeze is now blowing, and at this writing, November 2d, 6 o'clock A. M., the thermometer stands at 73°.

This mild climate, with the abundance of the nutritious bunch grass everywhere, renders this pre-eminently a grazing country. Cattle and horses are seldom fed here during the winter, even as far North as the 49th parallel, but graze all winter on this dry grass, which, through the dry fall, has become cured standing, so that it is nearly equal to timothy hay; hence, even up to the very summit of the mountains, on the head-waters of the Columbia and Missouri, we can drive up cattle in the spring, from the range, equal to the best Eastern stall-fed beef; and many of them have not tasted a morsel of hay or straw.

The atmosphere is salubrious and remarkably free from miasmatic impurities,

In the summer the heat is rather intense during the day, but every evening brings with it a refreshing coolness, which is perfectly delicious.

Wheat, rye, oats and barley grow finely, without irrigation, in all our soils which contain clay and loam, and can be raised on the sandy portions of the valley with irrigation. Three years ago, when our valley contained a population of less than 6,000 souls, all told, we raised about 1,000,000 bushels of grain, 700,000 of which was wheat.

I have seen large fields of wheat average 56 bushels to the acre, and weigh 62 pounds to the bushel; and have seen fields which yielded 40 to 50 bushels per acre, from a "volunteer" crop, that is, produced the second year from grain shattered out during harvest, sprouting during the fall, and growing without even harrowing.

We generally raise the variety known as "Club," and sow it in the fall or spring.

We produce about 40 bushels of corn to the acre, of the large Yellow Dent variety, and it ripens nicely by the first of September.

The potato is perfectly at home here, growing large, fine and mealy. I let a neighbor have nine pounds of the early Goodrich variety, last spring, from which he raised 1,575 pounds. Sweet potatoes yield finely, but they are not so sweet as further South. Turnips, beets, cabbages, tomatoes, peas, beans, onions, are all raised with ease and in great abundance.

Although the country has been settled but a few years, there are already a number of fine bearing orchards. I commenced here six years ago last spring on ground that had never been fenced or plowed. After thoroughly plowing up about five acres of ground, I planted it in orchard with small yearling trees. This year I had 1,000 bushels of the finest peaches that I ever saw grown—fully equal to the best Delaware and New Jersey peaches—besides large quantities of apples, pears, plums, cherries, apricots, grapes, and every variety of small fruits. Fruits of all kinds are perfect in every respect in this climate, particularly plums, the curculio having never been seen. I have 100 bearing plum trees; one Imperial Gage, two years ago, produced 400 pounds of delicious, rich fruit, which brought 8 cents per pound in gold; last year it had about the same amount of fruit, which sold for 12½ cents per pound, gold, many other trees, did nearly as well. There are a large number of orchards just coming into bearing in this country, which will, of course, bring down the price of fruit.

The climate is so dry that we never see anything like mildew or rot on the grape. I had grapes last summer ripen and have a fine flavor, which lay entirely on the ground.

Fencing on these plains is an important item. We go to the mountains for all our fencing and lumber, from 8 to 20 miles. We can buy good fir rails in the mountains for $1 50 per hundred, with a good road to haul them out. There has been a large amount of fencing done in this valley by ditching, but it soon wears down, and farmers are now building good rail fences.

There is yet a large amount of good land to be had in the Columbia Basin, by going back a little from the settlements, at $1 25 per acre.

The facilities for getting here from the East are, by Union Pacific road to Kelton, 80 miles West of Salt Lake, or Promontory Point, thence by daily stage, 500 miles, through Idaho and Western Oregon, to this place; or by rail or Panama to San Francisco, thence by steamship to Portland, Oregon, thence by steamboat by Columbia River to Wallula, and thence by stage, 30 miles, to this place."

ERRATA:—Page 15, 4th paragraph, for "foggy 43 days," read "foggy 14 days."